Mystery
Sweeps Winners
—p. 62

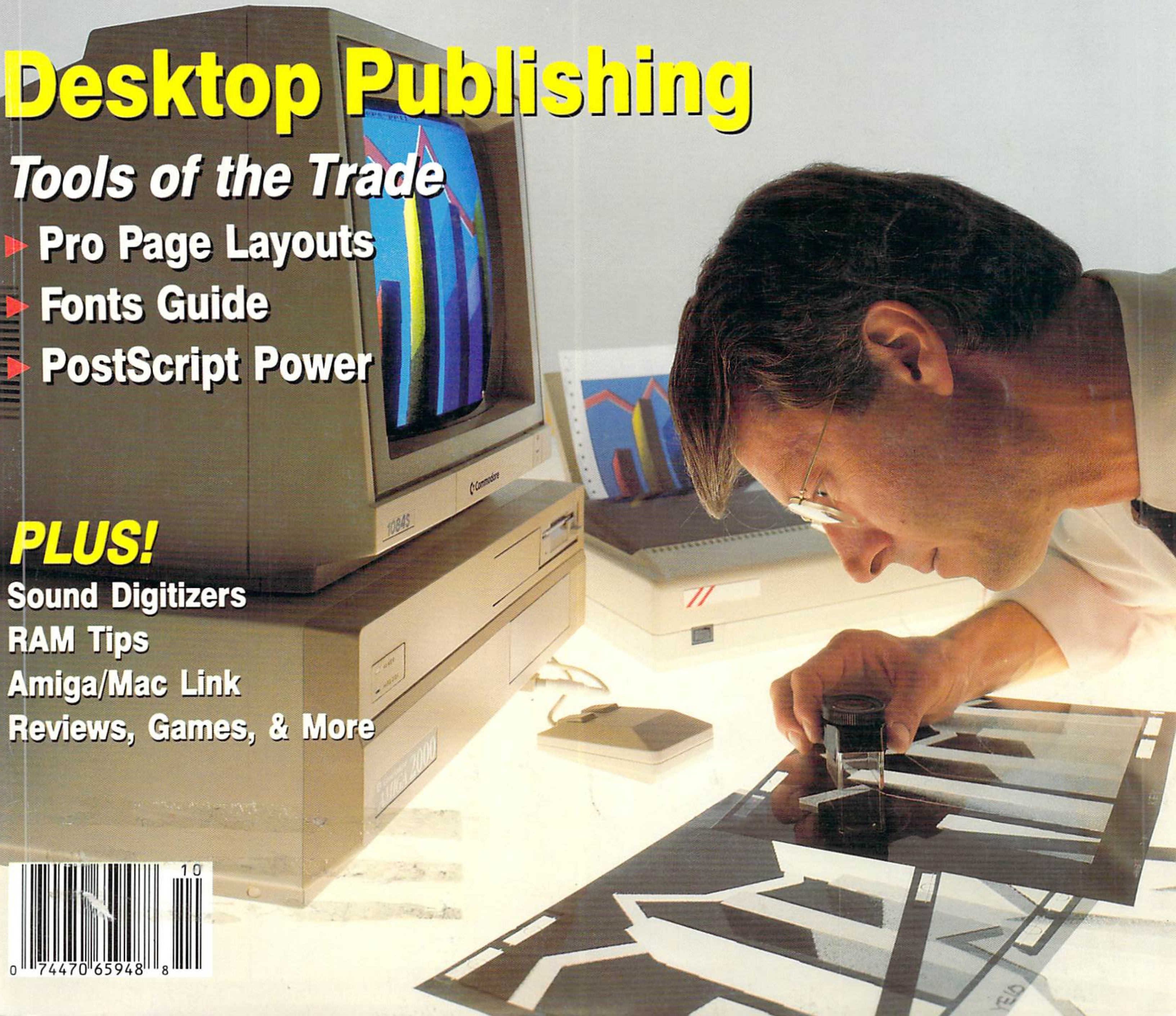
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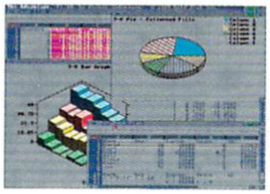
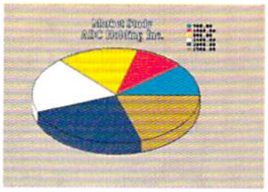
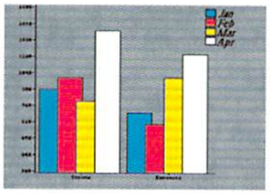
The Advantage is the most powerful integrated spreadsheet, database, and business presentation package on the Amiga.

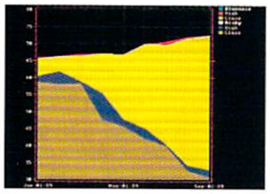
It devastates its competition in every category: spreadsheet size, recalculation speed, multi-media functions (with online support for Transcript), ARexx support, macro commands, and output control.

The Advantage also offers unprecedented, business graphic capablilities on the Amiga. Select from pre-configured 16-color chart templates. Save as IFF bitmaps, Professional Draw Clip, or Aegis Draw Plus format. Use them in any Paint, Animation, or Desktop Publishing program for unmatched business communications.

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SPECIFICATION COMPARISON		
	The Advantage	MaxiPlan
Maximum size:	65,000 x 65,000	512 x 32,760
# of simulaneously open worksheets	Unlimited	3
Maximum # of graphs	Unlimited	8
Maximum colors on charts	16	8
Multiple views	Unlimited	No
Sideways Printing	Yes	No
# of functions	90+	66
ARexx Support	Yes	No

PERFORMANCE COMPARISON		
	The Advantage	MaxiPlan
Redraw	0.87	2.35
Save	2.23	5.33
Load	3.84	6.69
Recalculation		
First	2.44	5.15
2nd (no changes)	0.19	4.30
2nd (w/changes)	2.24	4.88
Memory used	43216	69832

Tests performed on 1 MegaByte Amiga. Spreadsheet size: 9 rows x 44 columns.

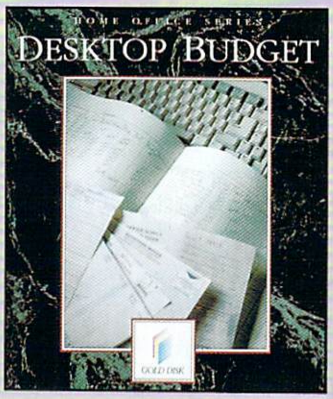
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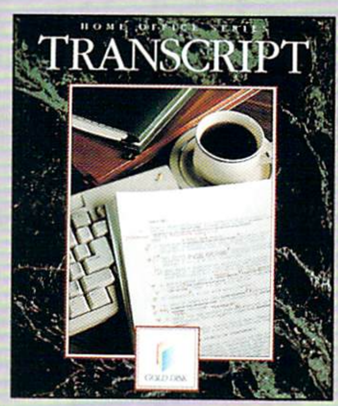
AmigaWorld, July, 1989

Desktop Budget 'Bank on it"

"...If you want a precise account of your monetary activity, along with options to reconcile your bank statement, keep track of your portfolio, print checks, and manipulate several kinds of reports choose Desktop Budget."

Desktop Budget has an intuitive icon-based interface and precise report generation. It outsells all other North American Amiga financial programs 2 to 1.

Requires 512K Amiga, 1 drive.



AmigoTimes, Aug., 1989

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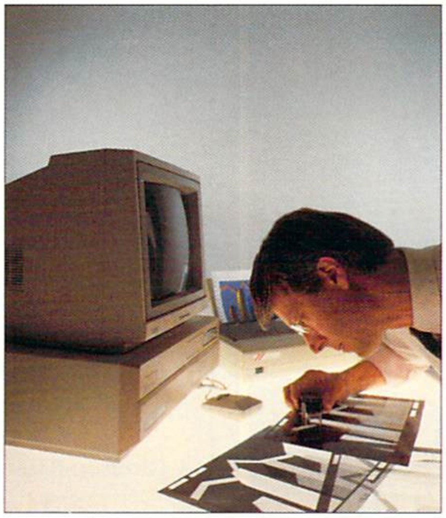
...That Professional Page was voted *Best Buy* by *Computer Buyers Guide* over PageMaker and Ventura Publisher - two Mac and IBM heavyweights.
...That several popular magazines are produced entirely with Professional Page using its sophisticated typographic and image handling controls and superb color separation features.
...That 8.6 out of every 10 Amiga desktop publishers use Professional Page and other Gold Disk products. Plus, PageSetter owners upgrade at a major discount. Call us!

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Amiga desktop-publishing tools are finally beginning to show the power, ease of use, and versatility of similar offerings from competitors IBM and Apple. In the first part of our DTP special, we'll show you how a powerful program such as Professional Page can help you create effective, well-designed publications on the Amiga. In part two, we'll examine why increasing support in the marketplace for sophisticated PostScript and structured fonts bodes well for professional, typeset-quality output for desktop-generated publications.

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It's time to find out "whodunit?" and "whowunit?" in **The 1989 *AmigaWorld* Mystery Sweepstakes**. See **page 62** for the **Solution** to the mystery and for the names of the **Grand Prize Winner** and other **Finalist Winners!**

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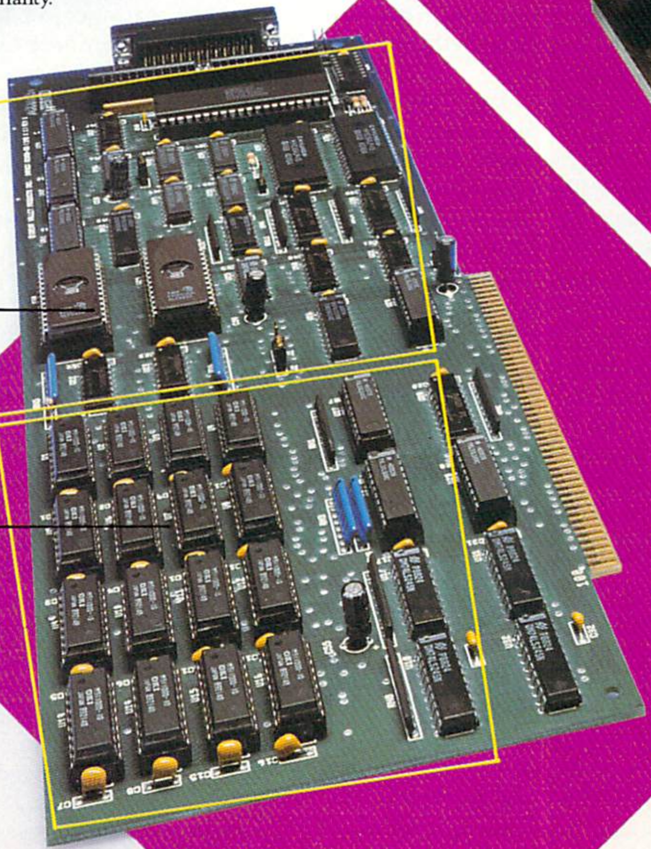
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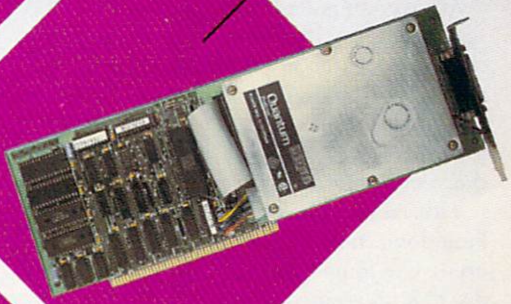
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First Impressions

Still superior after all these years.

AS A WRITER covering the PC market for *Computerworld*, I spent a lot of time over the last few years listening to IBM and Apple types describe the future of personal computing. It sounded pretty good. Sometime down the line, PCs would be able to do more than one thing at a time. Programs would be driven by graphics, blending beauty, sophistication, and ease of use. Memory would be freed up so that applications and data could grow to their full potential.

All customers had to do was wait for new hardware, operating systems, and of course, rewritten applications. Once these things arrived, customers were expected to pay the umpteen thousands to put such a system together, and thank the vendors for all their efforts.

This talk had been going on for a long, long time, with little being delivered. The longer the wait, the more like drivel it all seemed.

There was, though, a segment of the public that quickly saw through the thin veneer of vendor promises. These were the people who owned Commodore Amigas. Every time we'd write about IBM and Microsoft's OS/2 multitasking operating system, or the wonders of the Intel 80386 chip, the Amiga users would get steamed. And when they'd get really steamed, they'd write us letters, which *Computerworld* was nice enough to print.

Mark Cashmann, a DP manager, wrote a memorable one that was published in November 1986, when the industry was in a frenzy over the introduction of the Intel 80386 chip and rumors of a Microsoft large-memory multitasking operating system. Cashmann had had enough. He wanted the world to know that such capabilities already existed. His Amiga had built-in windowing, graphics, and animation, as well as sound and speech synthesis. Plus, it could efficiently access over 8MB of RAM, and had sophisticated software at low prices.

Few people listened to Cashmann. In fact, most computer users plodded along on single-tasking, character-mode PCs hobbled by an absurd and repulsive 640K barrier. The promise of a new operating system that would lift these shackles kept users from tossing their PCs out the window and buying something truly robust like an Amiga.

This new operating system was "just around the corner." (Sure, and cows can be taught to program in C too.) Most of OS/2's pieces finally shipped last year, some four years after the introduction of the IBM PC AT, its original target. Of course, running OS/2 on one of those machines is like pulling a tractor trailer with a Yugo. It's possible, but only a stooge would bother trying it.

About a year and a half later, we heard from a programmer/analyst named Christopher R. Hertel, who was miffed at one writer's rather simplistic touting of OS/2. According to the argument, OS/2 was great because it could multitask, access more memory, and had a graphical user interface. Whoopdydoo. Hertel's Amiga already had all that. There was even software for the Amiga, something OS/2 still sorely lacks.

Neil W. Plouff fired the best shot earlier this year. Plouff took on Microsoft chairman and youngest self-made billionaire Bill Gates after Gates had the audacity to argue that "true multitasking won't work in a 1MB system." The obviously astute Plouff pointed out that Gates' own Amiga Basic multitasks quite nicely in a 512K Amiga environment. In fact, it can multitask in less. Gates happened to be talking about OS/2, which uses more RAM to load itself than most Amiga users have ever dreamed of owning.

Of course, it is easy to pick on IBM. Quasi-monopolists have little incentive to innovate, and can get away with selling embarrassingly limited machines. The harder target is Apple Computer, which has managed to convince large numbers of otherwise bright people that the Macintosh is a state-of-the-art machine.

Apple is particularly proud that its most expensive machines can display color. Okay. I guess they have caught up to the Commodore 64. And now they have expansion slots. Gee, there's an innovation. But the most highly touted feature of all is a graphical user interface. Compared to the Amiga's, however, the Mac interface is still too slow, and has a total lack of such critical tools as batch files.

Now Apple is building a new operating system with all kinds of neat things that will ship next year. But guess what will be missing from this system? True multitasking! But you can't blame Apple. We all know how difficult it is to multitask with the Motorola 68000 family. It's just that someone forgot to tell that to Commodore.

So you can see why I am excited to be a part of the Amiga community. What is the future in the IBM PC and Macintosh market is the present and the past for the Amiga. We should follow the lead of people like Mark Cashmann, Chris Hertel, and Neil Plouff. Amiga users, developers, and especially Commodore cannot let the hypesters go unchallenged. The beauty and strength of the Amiga should be demonstrated in every way possible to those who believe in a strictly IBM/Apple PC universe.

Or, we can keep it to ourselves, and laugh quietly as others pay the big bucks for kludgey graphical, multitasking systems from the so-called market leaders. ■

—Doug Barney

A3001

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REPARTEE

Comments, complaints, and concerns

from AmigaWorld *readers.*

Drive Debate

I FEEL THAT Robert Ryan's article, "Amiga 2000 Hard-Disk Controllers" [*AmigaWorld*, July '89, p. 24], was not well researched and has missed on a number of important points, especially concerning Interactive Video Systems' TrumpCard and the Commodore A2090A controller. It has been my experience that these cards have been trouble free, easy to use and install, good performers in real-world use, well behaved (no unexplained gurus, and both work well with other cards, such as Commodore's A2620 card), flexible (the A2090A supports both ST506 and SCSI drives, and the TrumpCard supports removable media), and, in TrumpCard's case, very low priced.

Let's look at all the points of a product and use their current software before passing judgement.

Greg Huhn
Century Computer Systems
La Habra, CA

IN HIS ARTICLE "Amiga 2000 Hard-Disk Controllers," Robert Ryan gives the TrumpCard a very negative review. We always evaluate a product prior to selling it, and we have checked most of the controllers reviewed in this article. We could not get the dramatic results found by Mr. Ryan. The review was very unfair to the TrumpCard. In our assessment, the TrumpCard offers one of the best values available in an 8-bit hard-disk system for the Amiga 500/2000.

Jim Davis
J & C Computer Services
Honolulu, HI

Users Unite!

IN MR. KNIGHT'S letter ["The Video Race," Repartee, July '89, p. 8], he says that Mac developers work in tandem to create a cohesive software environment, while the Amiga developers are loosely united. Why don't Amiga users form a worldwide alliance to enforce standards, such as file formats and compatibility? If a product meets all the standards, we could then give it a seal of approval symbolizing that it meets standards set by other Amiga users. We could send out ballots to see what kinds of new products users want to see from the developers, and we could then request the developers to produce them.

I am serious about this. What do you guys think?

Sean Shelby

A worldwide alliance of Amiga users would be wonderful, but, to have any clout, it would truly have to represent the vast majority of users, and developers would have to be involved.

Commodore recently took the first step toward uniting the Amiga community by announcing plans to form a developers' advisory board, coordinate user interfaces and documentation standards, and participate more actively in key third-party projects.
—Editors

Joy of Computing

I WAS SURPRISED by the line of argument put forth by Mr. Grove ["Saturday Night Amiga," Repartee, June '89, p. 8]. The whole joy of computing, particularly with the Amiga, is to be able to share that enjoyment with as many people as possible, and looking down on users who are initially attracted to entertainment on the Amiga is just snobbery and elitism.

I would be only too happy to see the Amiga go the same way as the C-64 and the Atari ST, at least in terms of user base, because only then can the future of this great little machine be assured.

Peter Wesson
Orpington, Kent, England

In Business

In "Quiet but Promising" [Notepad, July '89, p. 10], Mark Van Name gives the impression that Commodore had built a flawed Novell interface, and, moreover, seemed uninterested in developing it. While your report may be true, it left me with the impression that Commodore builds inferior equipment and is out of touch with user's needs. Amiga users themselves often nurture the perception that Commodore is an unprofessional company and that the Amiga is outside the mainstream of business computing. This is untrue from my experience.

Our company, radio station WCMS, has a Novell network. Prior to getting approval for purchasing an Amiga 2000 for the station, I had to demonstrate that it was Novell compatible. With help from our local dealer, who loaned me a Bridgeboard, I took a Sun Microsystems Arcnet card from one of our IBM compatibles, inserted it into the Amiga's IBM side, included anet3.com in the autoexec.bat file, and proceeded to log in to the network, accessing perfectly all programs.

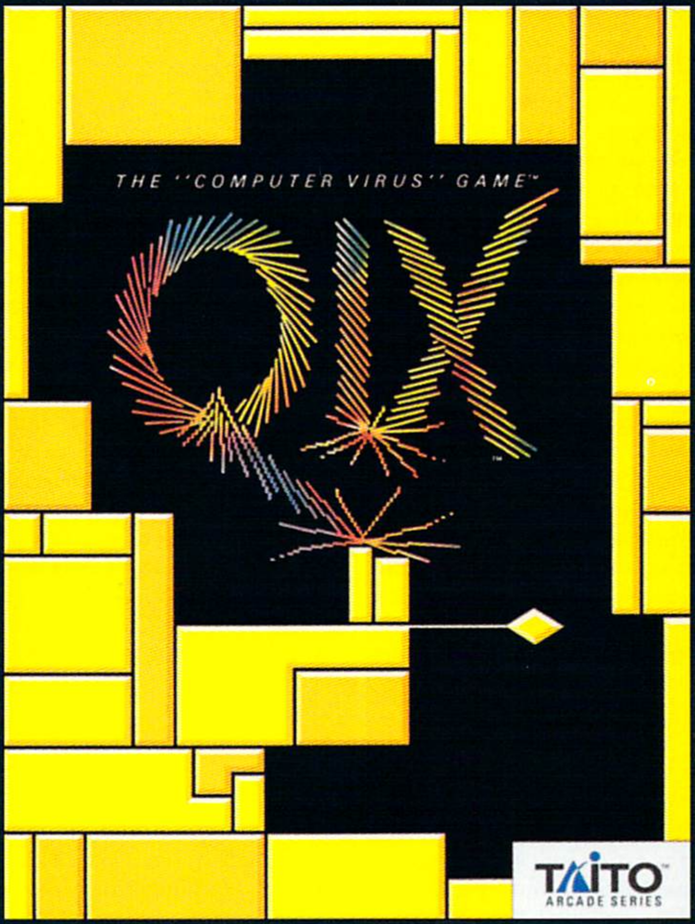
We have a Wyse-286 fileserver hooked to three IBMs, nine IBM compatibles, and one Amiga 2000. Wouldn't you know, when we give visitors a tour of our facility, the place where they stop and look with wonder is where the Amiga is kept!

Mike Budahn
WCMS Research Director
Virginia Beach, VA

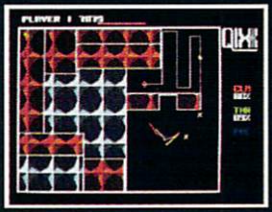
Send your letters to: Repartee, *AmigaWorld* Editorial, 80 Elm St., Peterborough, NH 03458. Letters may be edited for space and clarity. ■

VIRUS!

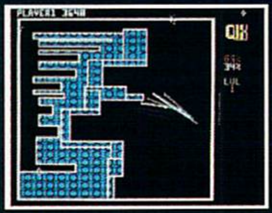
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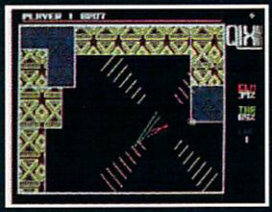
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NOTEPAD

Compiled by Linda Barrett

Power Players

SHARING THE HYATT Regency with a state governors' convention last July, Ami-Expo had some high-powered competition for the attention of Chicago residents. The combined megahertz exhibited on the show floor, however, more than held its own against the political pull.

A large contributor to the power surge was Digital Animation Productions' *Video Graphics Transputer*. This high-speed A2000-compatible 32-bit parallel architecture computer tower provides a palette of 16.7 million colors and serves as a relatively inexpensive alternative to equally powerful Sun and Cray workstations. Ranging in price from $1950 for a one-megabyte single Inmos T800 model to $13,050 for a quadruple transputer with 16MB of RAM, the device should appeal to CAD, graphic, television, and animation studios, plus colleges and universities that need low-cost parallel-processing computers.

Reaching out to other computer systems was in vogue, as Macintosh-compatible products were evident all over the floor. Readysoft showcased *A-Max*, a Macintosh emulator. M.A.S.T. advertised *Amig-a-Tosh* and *Amig-a-Tosh Plus*, Macintosh-compatible disk drives and hardware. Central Coast Software demonstrated *Mac-2-DOS*, which offers a custom hardware interface, an optional Macintosh-compatible 3½-inch floppy drive, and file-selectable software.

The software market welcomed several new versions of old friends. Gold Disk debuted *Professional Page V1.3*, with its Compugraphic outline font technology. ASDG announced version 2.0 of the *CygnusEd Professional* text processor. WordPerfect Corp. spotlighted *WordPerfect 4.1* and its improved file requester. Mindware International caught everyone's attention with *TASS* (Thut Application Support System), an ARexx-compatible utility that simplifies the creation of ARexx-based applications.

Hardware developers have been busy, as well. C Ltd debuted *Han-D-Scan*, a hand-held 400-dot-per-inch scanner, while Great Valley Products offered a *150MB Streaming Tape Backup system*.

The gamers were not forgotten: Mindscape ran a demo of *Fiendish Freddy*, a circus clown adventure game, while ReadySoft showed the new Don Bluth game *Space Ace*.

Although the governors just went home after their convention, the next whistle stop on the Ami-Expo goodwill tour is Santa Clara, California in October.

—TW

Can't Beat the Motion

GIVEN THE CHOICE of three state-of-the-art computer labs, students attending the California State University Summer Arts Center Program's Computer Studio for Artists and Designers overwhelmingly chose the Amiga-equipped lab for their projects. A dozen Mac IIs and a handful of Targa-equipped IBM PCs were no match against the Amiga's secret weapon . . . animation.

Three studios, one each for Macs, Amigas, and video production, sprouted among the Redwood forests of Humboldt State University in Arcata, California. More than 40 students put six Amiga 2000s, ten A500s, three digitizers, and a complete video production/editing system to the test for four weeks. A Fairlight effects box, MIDI-controlled audio equipment, page compostition and printing systems, plus nearly every major piece of graphics software completed the arsenal.

Graphics wiz Joel Hagen, animators Steve Segal and Gene Brawn, and video artists Jody Gillerman and Rob Terry guided the amazingly-talented students through their introduction to the Amiga wonderland. One-on-one instruction included a week of orientation to the computer systems and paint programs, a week of color graphics and animation basics, and two weeks of advanced study.

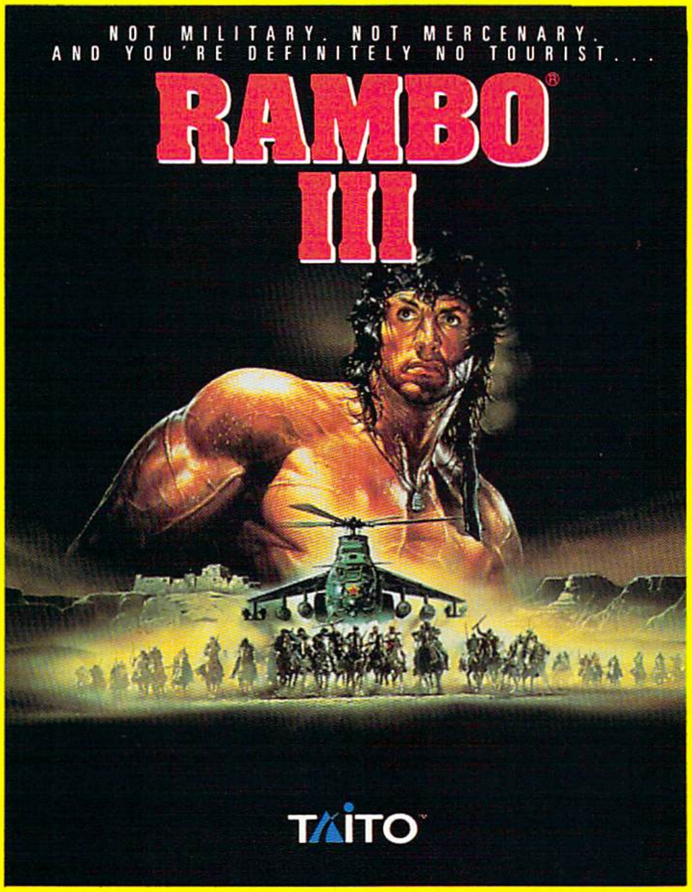
According to Course Director Steve Wilson, the studio is more than a mass of hardware. He considers the program more of a conceptual art piece intended to draw the student into the creative process. Working at their own pace, the students were presented with ideas, tools, and concepts rather than traditional assignments and deadlines.

The strategy succeeded, with the instructors often learning and discovering as much as their charges. Student-produced works ran the gamut from posters and color prints to several professional-quality animations. One unique production was built around an Amiga and Very Vivid's Mandala program controlling a fully-interactive sound-and-light show. A video of Amiga-generated and -manipulated graphics rounded out the display.

Funded in part by the California Arts Council and the National Endowment for the Arts, the program is open to everyone interested in computer arts, and the courses will count for academic credit. The fee for the 1989 session was $1000, including room and board. For information on the 1990 program, contact: CSU Summer Arts, The California State University, 400 Golden Shore, Long Beach, CA 90802, 213/590-5768.

—Gene Brawn

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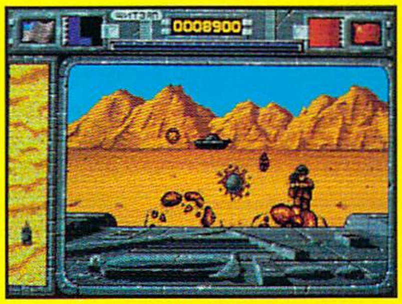
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REVIEWS

A-MAX

Quacks like a Mac, looks like an Amiga.

By Steve Peterson

THE AMIGA RUNS hundreds of Amiga programs by itself, and with the help of Commodore's Bridgeboard, thousands of MS-DOS packages. Now A-Max from ReadySoft enables the Amiga to run some Macintosh software, too.

A-Max employs both hardware and software to emulate a Macintosh. The cartridge that plugs into the Amiga's disk-drive port provides a pass-through connector for an external Amiga drive and another port to accommodate an Apple-compatible disk drive. The cartridge also contains sockets for a set of Macintosh ROM chips, which you must buy separately and install.

Central to the operation of A-Max, the ROMs contain information about the Macintosh and how it works. A-Max accepts either 64K ROMs (about $50), or the 128K ROMs (approximately $150), found in the Macintosh Plus. Because they are newer, the 128K ROMs offer greater software compatibility and are easier to come by. You can buy the chips from dealers that sell Macintosh spare parts (the A-Max package includes a list); some Amiga dealers that sell A-Max also carry the ROMs. To install the ROMs, simply remove the screws from the cartridge, lift off the cover, and carefully plug the chips into any of the sockets. Then replace the cover and screws, and plug the cartridge into the Amiga. The A-Max documentation is complete—a couple of readings sufficed to install and configure the unit—but it is somewhat confusing, partly because it contains no illustrations.

MAKING YOUR CHOICES

Booting the A-Max software prepares your Amiga for Mac emulation. Of necessity, A-Max takes over your computer and does not multitask with other Amiga programs. The software gives you a number of configuration options, including several display formats. You can choose the standard Mac screen size of 512×342 (which A-Max presents in interlaced mode), 640×400 (also interlaced), or 640×200 (wherein A-Max displays one half of a 640×400 page; you can opt to scroll the display quickly or slowly as you move the mouse up and down, or skip from the top half to the bottom half). Of these options, I found the 640×400 interlaced easiest to work with. If you have a Commodore A2024 or Viking I (Moniterm) monitor, you can take advantage of the 1008×800 mode.

A-Max defaults to its own set of colors, but you can use the first two Workbench colors set in Preferences if you prefer. You can opt to print through either the parallel or serial port. Finally, and most importantly, A-Max offers a number of ways to configure your memory to enhance compatibility with various Macintosh programs. Any memory you choose not to use is set up as a recoverable RAM disk.

Once you have confirmed your selections, A-Max's Welcome to Macintosh screen appears, and your Amiga is ready to run Macintosh software. You cannot just put a Mac disk into your Amiga drive and expect it to work, though. Because the Macintosh uses variable-speed disk drives, Amiga drives cannot read Mac-format disks fully. A-Max gets around this by providing software that lets you format a disk—using your Macintosh—with space for 272K of Macintosh data that Amiga drives can read. Thus, you can copy data from your Macintosh program disks (most Mac software is not copy protected) and ferry information to A-Max in 272K chunks. The best way to run Macintosh software on A-Max, however, is to use an Apple-compatible drive (which costs about $150–$200). Besides using a modem, the only way to shuffle A-Max data to a Macintosh is to use an Apple-compatible drive; A-Max has no provision for back transfers.

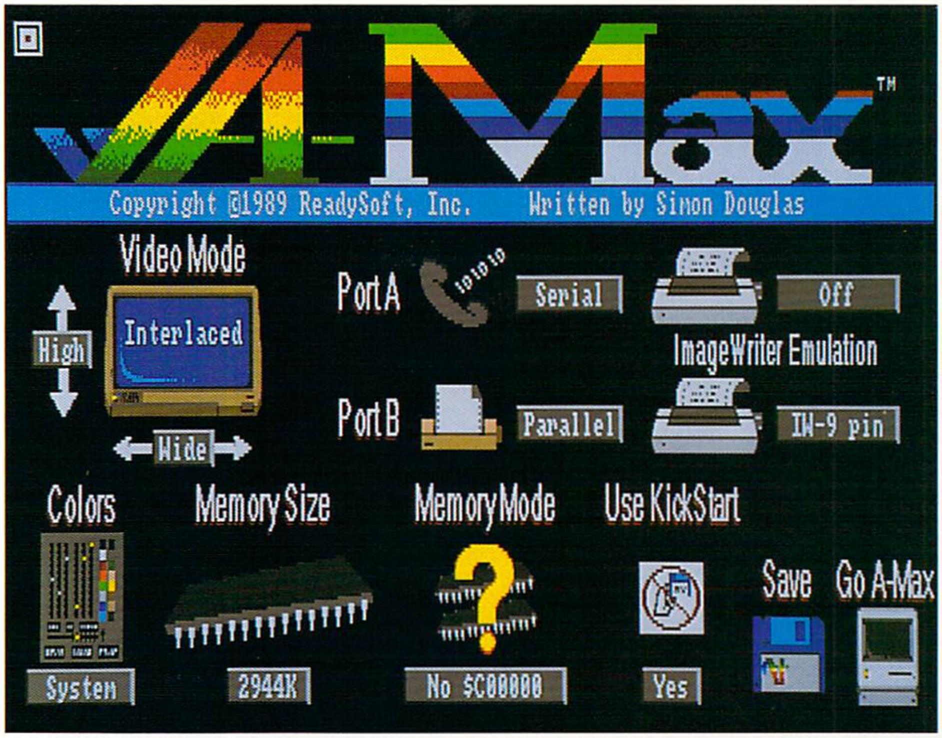
A-Max treats Amiga disk drives as 800K Mac drives, but disks formatted by A-Max can be read only by the emulator; neither a Macintosh nor an Amiga in normal operating mode can read these disks. Unfortunately, A-Max cannot access Amiga hard drives, so you're limited to floppies. This is a substantial limitation, as some of the more recent Mac programs (such as PageMaker 3.0) require a hard disk.

Outside of this restriction, compatibility with Macintosh software is excellent. A-Max requires Apple's system software (System and Finder) to run, and can use the latest versions. (Many Mac software packages include these programs; you can also buy them for about $50 from Apple dealers.) I successfully ran a number of popular Macintosh programs on A-Max, including Microsoft Word 4.0, Excel 1.5, Smartcom II, DeskPaint, HyperCard, and PageMaker 2.0.

A-Max will not run all Macintosh software, however. Many games, MIDI packages, and other programs (such as scanner software) are designed to bypass

the ROMs entirely and instead address the Macintosh hardware directly. These will not work with A-Max. Macintosh software that requires a Mac II will not work either, because A-Max does not support the 256K Mac II ROMs.

A-Max's performance in terms of disk access time and recalculation speed is comparable to a Macintosh Plus—screen refreshing is even faster. The A-Max display is not as crisp as the Mac's, but that is not the fault of the package; color monitors offer less resolution than do black-and-white screens. For long-term use, you will want a solution to the flicker problem. According to ReadySoft, A-Max can use the Enhanced Chip Set (soon to be released from Commodore) to produce a 640×400 flicker-free display on a multi-scan monitor. A-Max also supports the flickerFixer (MicroWay).



A-Max welcomes you to the best of both worlds.

What's the Difference?

Using the serial port, you can emulate an ImageWriter with an Epson-compatible printer; I found the print quality with an Epson 9-pin indistinguishable from that produced by an ImageWriter I. Unfortunately, A-Max cannot print to a LaserWriter (which supports PostScript) directly because it does not support AppleTalk. It is possible to get around this by creating a PostScript text file and dumping it to the LaserWriter through the parallel port, though this is an awkward process.

A-Max's file-transfer utility provides straightforward transfer with no conversion between file formats. A true transfer module for formatted text, IFF images, and so on would make A-Max a better bridge between the Macintosh and Amiga worlds. I would also like to see support for AppleTalk to provide network and LaserWriter compatibility. A-Max's greatest limitation, however, is its lack of hard-disk support. To address this, ReadySoft is promising an upgrade by year's end to allow hard-drive access. Such support would make A-Max even better than the Mac Plus; for many uses, an A-Max-equipped Amiga would then rival the Mac SE or the Mac II.

Recently, Apple has threatened to curtail the supply of Macintosh ROMs to prevent the success of Macintosh clones. It's worth noting, however, that similar Macintosh emulators appeared for the Atari ST a year or two ago, and Apple did not crack down on ROMs then. If you need file compatibility with your office or your clients, or need to use a piece of Macintosh software that does not yet have an equivalent on the Amiga, A-Max can save you a lot of money. The street price for an Amiga 500 with monitor, two disk drives, and one meg of RAM plus A-Max with ROMs and an Apple-compatible drive is about equal to that of a Macintosh Plus (including monitor and one meg of RAM) with two drives. For the Amiga owner who knows its limits, A-Max is a great deal.

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Canada L4B 1B9
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Dual Serial Board

Outputting with a forked port.

By Sheldon Leemon

ALTHOUGH THE AMIGA'S multitasking operating system software is capable of sending and receiving information through several ports at once, its single serial port limits the computer to one serial operation at a time. This can be a fairly severe limitation, given the number of serial devices that the Amiga can ►

use—printers, plotters, audio digitizers, optical scanners, touch tablets, assorted MIDI interfaces, film and video recorders, video-disk players, and more.

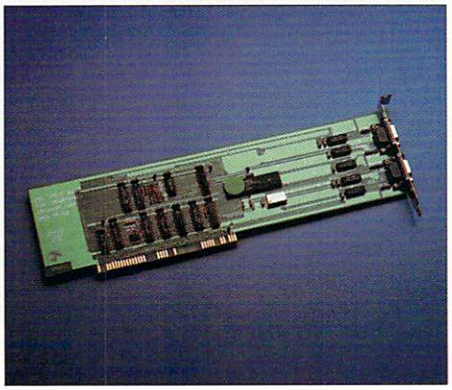
The second drawback to the standard Amiga serial port is its lack of speed. Running at speeds as low as 9600 bits per second (bps), reliable transfers are difficult to obtain, particularly when using a 16-color hi-res screen that eats up much of the system's processing power. This limits the usefulness of high-speed serial devices on the Amiga and makes it difficult to program software for MIDI devices that transfer data at 31,250 bps.

The ASDG Dual Serial Board (DSB) addresses these problems by providing two additional serial ports on a plug-in card for the A2000. Because of size limitations, nine-pin D-shell connectors are provided on the mounting bracket, instead of the standard 25-pin type. The nine-pin connectors use the same serial cable as the IBM PC/AT. The DSB's serial ports can be programmed to any of the original port's speeds, including the oddball MIDI speed not supported by most serial interface chips. Unlike the standard port, however, the latest (8 MHz) version of the DSB can reliably transfer data at speeds of up to 115,200 bps on one port, or 57,600 bps on two ports at once. The earlier 6 MHz version of the DSB ran reliably at up to 76,800 bps on a single port. (The ICheck program that comes on Workbench 1.2 can tell you which version of the board you have; ASDG updates 6 MHz boards for $30.)

Behind Every Good Board...

No matter how good the hardware is, however, it is of little use without the appropriate software. The DSB's software is extremely polished. The Exec-level device driver, siosbx.device, corresponds to the Amiga serial.device, but can support unit numbers higher than 0 (0 and 1 if you have one board installed, higher numbers if you have more boards). Terminal programs that provide support for devices other than serial.device—such as Online! Platinum (Micro-Systems Software), A-Talk III (Oxxi), and the forthcoming version of Access (a shareware program)—can use the new driver directly. It can also be used by some terminal programs that do not support alternate serial devices directly: All you need to do is patch these programs (replace the text string "serial.device" with the string "siosbx.device") using a text or file editor.

Because the patch method allows you to use only unit number 0 with such programs, ASDG has provided an ingenious alternative, the Serial DisPatcher program. This program replaces the normal Amiga serial.device file, and when any program tries to open the serial device, it pops up a window asking if



More ports + more speed = DSB

you want to use the default Amiga port or one of the SBD ports. If you make no response within 15 seconds, Serial DisPatcher defaults to the standard port. If you select one of the SBD ports, DisPatcher uses it instead, and the host program never knows the difference. While this provides a suitable solution most of the time, an option that allows the DisPatcher to default to one of the SBD units would be handy.

The DSB software offers not only Exec-level driver support, but AmigaDOS-level support as well through two handlers, SERX-Handler (which corresponds to AmigaDOS's SER: handler) and SERXI-Handler (which corresponds to the AUX: handler). These handlers are even more flexible than their AmigaDOS counterparts because they let you control their communication parameters through command-line options, a Mountlist entry, and the default Preferences settings. They also enable you to perform any normal AmigaDOS operation with the DSB ports, such as copying a file to one of the serial ports, or opening up a new CLI task over a serial connection. Because most MIDI programs do not use the operating system routines to speak to the serial port, ASDG plans to provide hardware-level support to music-program developers and is working on software that will allow the Music-X (MicroIllusions) to use the DSB ports as MIDI ports.

Although setting up a Mountlist entry for the AmigaDOS handlers or patching a program to use the Exec-level drivers requires a fair knowledge of the system, ASDG makes the DSB easy to use. The supplied installation program automatically places the necessary system files in their correct directories on your Workbench disk, and if requested, also replaces the standard serial device with the Serial DisPatcher program. To save you some money, several public-domain terminal programs are also included.

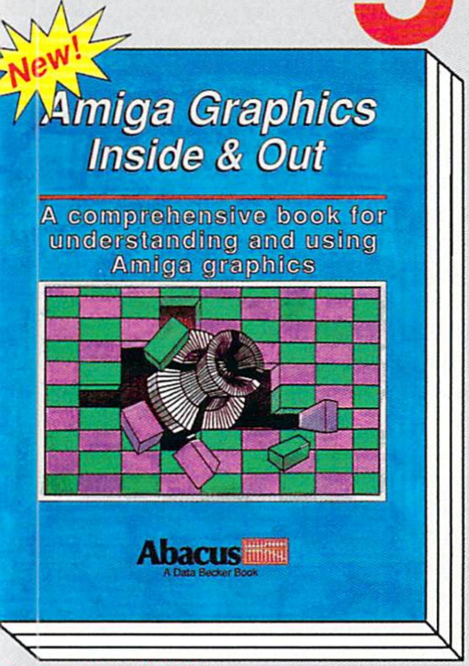
Should you decide to purchase the package, be sure to send in your registration card. ASDG has updated the software twice already, fixing problems with the wireless Zing! mouse (Meridian Software) and the freely distributable VLT terminal program, and providing better compatibility with 68020 and 68030 accelerator boards.

Speak to Me

In test operations, the Dual Serial Board performed without problems. On one computer, I was able to transfer files between the two DSB ports while using Supra's internal modem to download a file from a bulletin board and transferring a file from another computer hooked up to the standard Amiga serial port simultaneously. The maximum transfer rate between the two ports using a 6 MHz board was about 2500 bytes per second, not bad considering all that was going on. Of course, your mileage may vary—accelerator boards will speed up transfers, while terminal programs that use large 16-color screens will slow them down. I was also able to hook up a PostScript laser printer at 38,400 bps (57,600 is the maximum rate with an 8 MHz board), which provided much ►

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The Dual Serial Board provides a much-needed expansion option for Amiga 2000 owners. It not only provides extra serial ports, but does so in a manner that is fully compatible with the Amiga operating system.

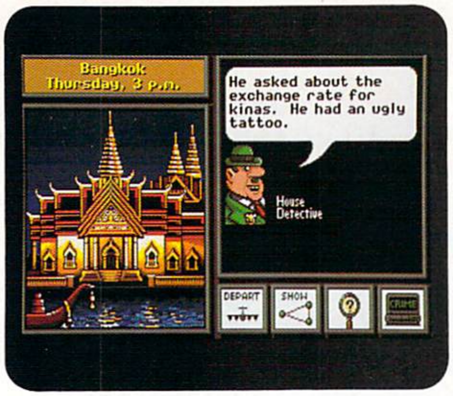
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Where in the World Is Carmen Sandiego?

Learn to have fun.

By Randall R. Greenwald

CARMEN SANDIEGO IS the cunning ringleader of a gang of master thieves who covet the likes of the English monarchy's crown jewels and the Staten Island Ferry. As an investigator working for the Acme Detective Agency, you are assigned to gather clues that identify the individual responsible, track the hoodlum to his or her hideout, and make an arrest. Carmen's thugs, careless though they may be about leaving clues, do not wait in one place to be found. Your search will lead you around the world to perhaps four, five, or six cities on different continents.



To catch a thief, you must decipher the clues and follow your nose.

Sounds like a game to me. . .but why does the package include a copy of the World Almanac? Could it be that we players are supposed to learn something? We are, according to Broderbund. The program can be ordered with a teaching guide ($10) and is recommended by the publisher for grades four to nine.

Where in the World Is Carmen Sandiego? is easy to pick up and hard to put down. The main screen is divided into three windows, and other than typing in your name, you can control it with the mouse. You begin in the city that Carmen's gang has just hit, with only a description of the crime and the gender of the suspect. Clicking on icons—the library, sports club, market, bank, stock market, for example—summons characters who reveal clues concerning the identity of the suspect and his possible destination (there are 1000 possible clues). Thus, you learn perhaps that she had red hair and left in a vehicle flying a red, white, and green flag. (My children have worn out the Almanac's flag pages!) Some clues are more difficult to research ("He wanted to buy some figs to make some figgy pudding," for example), yet each provides you with enough informa- ►

tion to enable you to follow your suspect to the next city.

FLYING HIGH

Getting to your next destination is half the fun. Clicking on the Depart icon brings up a world map with several highlighted cities. Click on a city, and a digitized jet takes you, in stereo, to your next stop. If you have read your clues correctly, you will be greeted by one of the thief's animated henchmen (especially entertaining to children). If you are mistaken, you have lost valuable time, and must retrace your route back to your point of departure.

As you arrive in each of the 30 cities, you see a picture of a significant landmark and text highlighting a feature of the country in which the city is located. These pictures, including the Sydney Opera House, cherry blossoms around Mt. Fuji, a perspective rendering of the Eiffel Tower, and Norwegian fjords—are all stunning.

If you are successful in tracking your suspect, you must have a warrant to make the arrest. To secure one, click on the Crime Computer icon and enter the information you have gathered. If you have secured enough clues in the allotted time, the computer generates an arrest warrant for one of the criminals in its database matching the description your clues provide. Make an arrest without a warrant, and the chief will warn you about possible lawsuits.

Warrant in hand, approach the final city with caution. Hatchets, knives, and pistols may be aimed your way, all with appropriate sounds. Properly locating the suspect's hideout begins another animated routine that results, if you were accurate, in landing the thief behind bars. This improves your record, placing you in line for one of four promotions. As you are promoted to higher levels, you will have to trace your suspects through more cities.

JUST THE FACTS

Where in the World Is Carmen Sandiego? makes good use of the Amiga's animation, graphics, music, and sound capabilities, although I think that some of the sound clips are too short (when flying from Mexico to China, for instance, the sound of the jet runs out before you land). It works with 512K, but is designed to run faster with one meg. We ran it both ways and saw little difference: No matter which mode the program was in, we still had to wait for each animation sequence to load from disk.

Though Where in the World Is Carmen Sandiego? is copy protected, you are not without replacement and backup options. Broderbund will provide a backup copy for five dollars, or, if you are tight like me, you can follow the manual's instructions and create a backup disk by treating a formatted floppy as a hard drive. You can also use the CLI to replace all the directories on a copy of Workbench with those from the program disk. Both of these means still require the original as a key disk. Following the documentation's clear steps, you can also copy the program to a hard drive for safe keeping. Our original disk proved defective, but Broderbund's customer-support person diagnosed the problem and sent a replacement immediately.

The manual displays a different world map projection than the one that shows

Continued on p. 86

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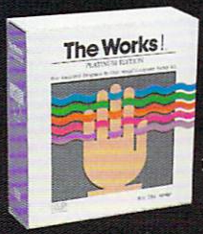
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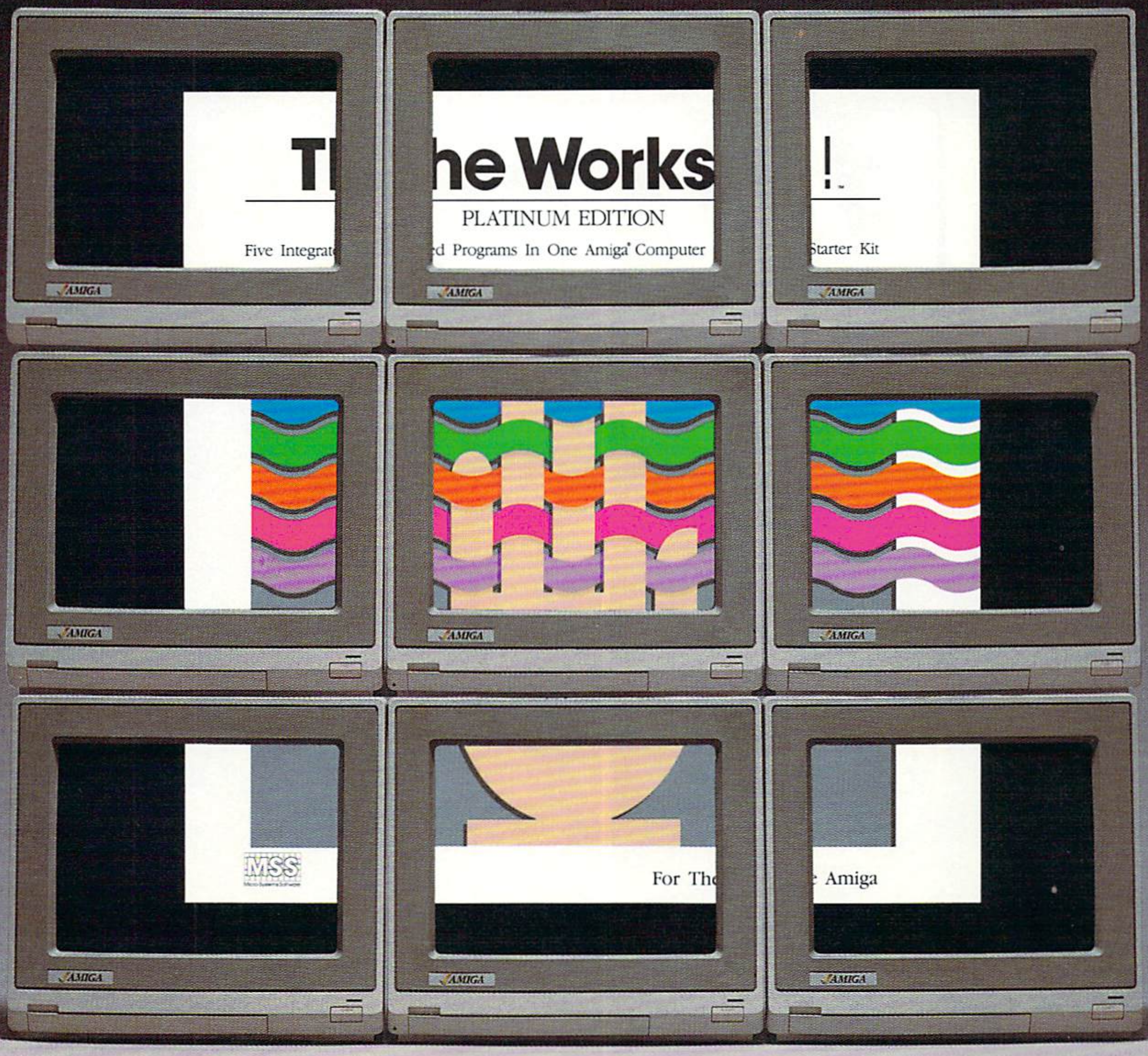
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PROJECT PRO

MASTERING THE MECHANICS OF DESKTOP PUBLISHING

This two-tiered tutorial will show you what you need to know about planning and designing your organization's newsletter, plus how to create the finished product with Gold Disk's Professional Page. And once you've mastered the page-creation mechanics of newsletters, you'll be well equipped to tackle an even more sophisticated variety of desktop-generated publications.

BY DOROTHY RANKIN

TO CREATE A successful newsletter, brochure, prospectus, or similar publication you need an attractive, well-organized design and powerful, versatile tools to execute that design. This two-part tutorial aims to provide some practical pointers in type and graphics design, and to incorporate these tips into a working knowledge of Gold Disk's Professional Page.

The newsletter is one of the most widely used promotional pieces. Over 100,000 newsletters are published each year in the United States, and the number is growing, thanks in part to the ease and small expense of desktop publishing.

While the Amiga may be a late entry in the field—and thus not as well-known as the IBM PC and Apple Macintosh—the development of full-fledged DTP software such as Professional Page is making the Amiga a formidable contender capable of outstanding, top-quality work. ►

ILLUSTRATED BY TOM BOOKWALTER



KEYS TO GOOD DESIGN

MANY PEOPLE UNFAMILIAR with design produce newsletters that show all the capabilities of a desktop-publishing program but few of the capabilities of the company they represent. Amateur DTP enthusiasts are often so taken with the sheer variety of possibilities—type styles, lines, column widths, shadings, and the like—they tend to use all the tools available on the program. The results are a hodge-podge of different styles competing separately for the reader's attention. At the other extreme are those who suddenly have to put out *something* and simply do not have the time to study a program's capabilities, let alone layout and design. The outcome here is a one-dimensional newsletter that is stilted and boring.

It takes a while to learn a program and it takes longer to understand design. Unless you already have some background in graphic design, or have some innate understanding of the concepts, you may find that your newsletters lack the appeal you originally imagined. Even if you do have some design skills, there are certain "rules" peculiar to newsletters that you may find helpful to know.

TAILOR YOUR TEXT

Some newsletters are easier than others to produce. They may have a "captive audience" and are designed largely for informational purposes. Nonetheless, they have to be clear and easy to read, but they do not need a lot of graphics and gimmicks. Others are used mainly as marketing tools and need a strong visual appeal—perhaps even an "artsy" look for certain kinds of audiences—with short articles, lots of photos and graphics, and plenty of "white space."

Let's start with the fundamentals. About the most basic part of a newsletter is the text, which calls for a choice of typeface(s) on your part. Professional Page offers quite a number of fonts from which to choose, but don't get carried away. If your newsletter is geared toward a professional or academic audience, choose one typeface for your text. Within each typeface are different styles, or "attributes"— italic, bold, outline, and so forth—from which you can find variation. *Serif* typefaces (like the one you are reading here—with short little lines stemming from the upper and lower ends of each character), such as Times Roman and Palatino, are easier to read, and the body copy of most newsletters should be in a serif type. There are exceptions to this rule: If the articles are short and the subject matter is "soft" or light, a *sans serif* face, such as Helvetica, works quite well.

The size of type should be consistent throughout, with the exception of headlines and such special items as logos, mastheads, special department titles, or a calendar of events. If at all possible, it is better to cut an article to make it fit into a certain space rather than to change the type size part way through. Barring that, you can continue the article to another page. If you really need to include a long article and can make it fit only by decreasing the size of type, set it apart from the rest of the newsletter by enclosing it in a plain or shaded box. You can also change the line spacing (called "leading") slightly if you need just a little more room. On the other hand, if there is more space than type, leave the space alone.

Headlines offer a little more artistic freedom. You can use the same typefaces as in the rest of the copy, or try something entirely different. You can make your text a serif face and headlines sans serif. But stick with one typeface—two at the very most—and two or three different sizes. Good design is not arbitrary. The more articles in your newsletter, the *less* you should vary the size of headlines. The idea is to keep it simple but not boring.

Headlines are usually set with "left justification," although particular layouts may call for "center justification." It is perfectly okay to use both in one newsletter, but only if there is a reason. (The terms in quotation marks are the forms used by many desktop-publishing programs, including Professional Page, for positioning of text. They do not necessarily correspond to traditional type-design terminology. "Left justification," coresponding to "flush left, ragged right," means starting at the beginning of the left margin of the column each time, but ending in irregular fashion on the right margin, depending on the length of the last word. "Right justification," corresponding to "flush left, justified," indicates the text not only aligns evenly on the left margin, but also on the right margin. "Center justification" simply refers to centering. Although infrequently used, "flush right, ragged left" can be employed for such special effects as captions set to the left of a photo in a wide margin of white space.)

Another way to use headlines for interest is to create subtitles or "decks." Pull out an important phrase from the copy and set it bold italic, perhaps several points less than the headline and in upper- and lowercase if your headline is in capitals. Another variation

of this is the "pull quote"—again a phrase or quote extracted from the text, but this time set out in the outer margin (if you have allotted enough white space for the purpose).

As a rule, the text of your newsletter probably should be left justified. This is now the trend, and, like all good design, the reason is simply that it is easier to read that way. Also, when a column of type is right justified, in order to make the line end evenly the words sometimes are spread across the column width with large, awkward spaces between them—although using hyphenation, of course, can correct that problem (sometimes with a lot of extra work and bad word breaks). If you do use right justification, do it with columns of short widths. Generally, the larger the column width, the more reason to left justify.

Other text points to keep in mind are if you are providing extra space between paragraphs, avoid indenting. If you do not give extra space and do indent, it is a good idea not to indent the first paragraph of an article, or the first paragraph after a "break head" (subheadlines interspersed throughout the body copy to provide visual relief from long columns of text).

Type may be the major element of your newsletter design, but it must fit with all the others. Try to find a balance between type, graphics, photos, and white space. Give yourself some breathing room. Designers pay a lot of attention to the way the eye moves around a page. If your eye gets stuck somewhere, the page is not balanced. Each page needs, simultaneously, to be varied and static—both interesting and comfortable. For instance, the cover pages might use two columns while the center pages use three columns. Or both the center pages might have two-inch columns on the outside and four-inch columns on the inside.

Don't "Just Do It"—Plan It First

Talk of column widths and variations brings us to the planning stage. Don't take those athletic footwear commercials to heart and jump right into things. Good initial planning will yield much better results *and* save you time in the end.

The great thing about desktop publishing is that you do not have to know the exact number of column-inches required for each article. There are formulas for figuring out how many words take up how many column inches, but as every font brings a different variable to the equation (different fonts take up different amounts of space even in the same point size), it is easier to experiment. Type one page of copy into a column you have created with your desktop-publishing program and note the number of column-inches it takes up. Change the column width and note that length. Change the type to something larger, such as American, and note the amount of space it takes up. Save your notes for redesigns or future newsletters. For instance, one page typed elite, double spaced equals two column-inches Palatino 10 point.

Once you have an idea of how much space each article requires, you can draw a "dummy" (a page-by-page mock-up or sketch of the entire newsletter) and plan the layout. Obviously, the more important articles should be placed first and high on the page, and related articles should be placed close together. When planning the placement of photos and artwork, you can be tight or loose depending, again, on your audience. For instance, photos and graphics can be made to fit into the width of a column (a more traditional method) or they can be larger than the column, perhaps with the type "wrapped" around them (a somewhat "flashier" approach emphasizing the graphic—and the design itself—over the text).

For some of us, planning is the most difficult part. We want to get right into the program and start making a newsletter. But planning ahead can save you hours of grief later on. If you have first sketched out a mock-up, you can see the relationship of photos, text, graphics, and white space. Just as important, this kind of planning enables you to do a lot of the work in the word-processing stage. You will know the order in which the stories should be flowed into the program. And you can use formatting codes to specify typeface, size, style, line spacing, left or flush justification, kerning, hyphenation, and indentation. I highly recommend using your word processor for most of these decisions.

Once the articles are typed into your word processor and the mock-up is complete, you can create your page templates. A newsletter should have the same "look" throughout its life; it makes your work easier in the long run, and the consistency brings a certain familiarity and comfort to your readers. When it arrives in the mail, we immediately know its source, and we know where to find certain articles that interest us. Therefore, for our project we are going to create a four-page newsletter by first creating four page templates that might be used over and over again.

Remember, try to determine beforehand what will be the same in every newsletter: the banner, perhaps certain lines at the top and bottom, margins all around, the number and size of columns, the space for a mailing address, and the masthead. These are essential considerations for designing your templates.►



PRODUCING A 4-PAGE NEWSLETTER

BOOT UP YOUR Professional Page and we can begin creating a newsletter. First click Preferences/Layout Tools. Click Columns: On and, for now, Outlines: Off. Click Snap to Grid: On. Select OK. Now select Page/Create from default and set basic specifications for your pages.

Page 1 Set margins at (in inches): Top: 2.75; Bot: .5; Left: 2.5; Rt: .5. (Printers need at least $3/8$-inch margins on the sides for what is called "gripper space," the space the press needs to hold the paper.) Two columns; .5-inch gutter. When you save these pages, use the name of the newsletter, the page number, and a tag such as .tm for template. We'll save this page as News1.tm.

Page 2 Set margins at: Top: 1; Bot: .5; Left: .5; Right: .5. Three columns; gutter .5. Save as News2.tm.

Page 3 Same as above. Save as News3.tm.

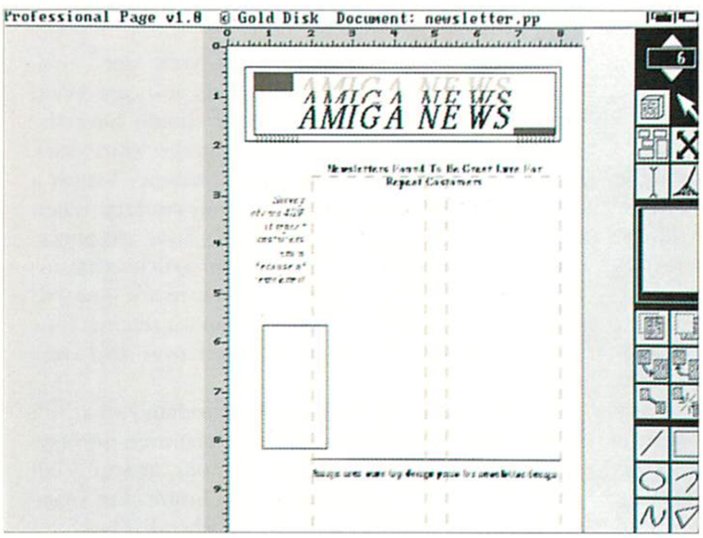
Page 4 Set Top: 1; Bot: 3.7; Left: .5; Right: .5. Two columns; gutter .5. Save as News4.tm.

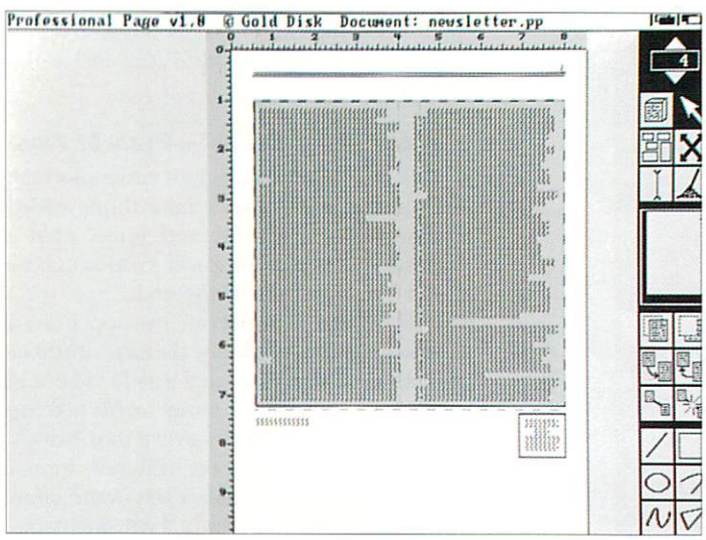
Now we will create those things that will be consistent in every newsletter, starting on page one. The banner usually includes the names of the newsletter and organization or business, the volume number if needed, and the date or season. You may prefer to create the banner separately, off the computer, using the company logo and press-type, although your desktop-publishing program can easily do the job for you. We created the banner in our sample below with Professional Page. Your printer may limit the number of typefaces used in one project, so check your printer's capabilities before using a typeface for the banner not used in the rest of the newsletter. Be sure to separate the banner from the rest of the page with lines and/or white space.

Banner and Front Page

Go back into the layout tools and click Outlines: On. Click on the Box Create tool from the general tools and create your banner box at the top of page one. Start at $5/8$" from the top and left and pull to $1\,7/8$" from the top and $7\,7/8$" from the left. Now select your typeface. For the organization and date, choose one type style and size, such as 14-point Palatino. Type in "A Quarterly Publication of [organization name]." Highlight this line and change the type size to 14 point and the style to italic. Press Return.

Now type in the title of your newsletter. Highlight it and change the point size to 36, the style to bold, the tracking to + 10, and the justification to Centered.





Sample templates for page one (front cover) and page four (back cover) of a basic four-page newsletter. Using a variety of Pro Page layout and drawing tools, you can create elements of your newsletter that remain the same, such as banner, placement of volume and date, margins, column number and width, space for mailing address, postal permit, and so forth. These can be saved in your templates and used over again from issue to issue.

Then select from the Color menu Ink Color 20%. Press Return. Highlight again and select Copy from the Edit menu. Place the cursor on the next line and select Edit/Paste. Now highlight the second line and from the Color/Ink Color list select Gray 60%. Now highlight both lines and select Type/Line spacing. Change Relative to 40%. Press Return. One last time, copy the last line and paste on the next line. Highlight and change the ink to Black. Highlight the last two lines and select Line Spacing Relative 40%.

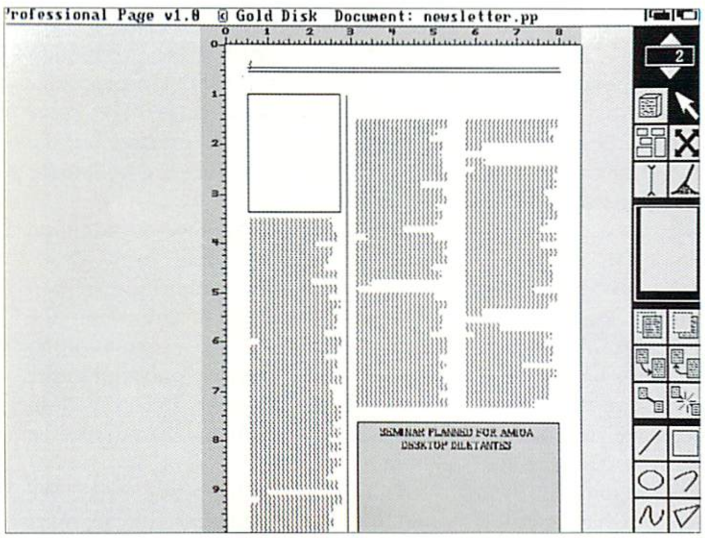
Select the Rectangle drawing tool and draw a box around your banner using a 2-point rule. Start at $\frac{3}{8}$" from the top and left and go to $8\frac{1}{8}$" × $1\frac{7}{8}$". Create a second rectangle inside the first by selecting a $\frac{1}{2}$-point rule and drawing it $\frac{1}{8}$" inside the first.

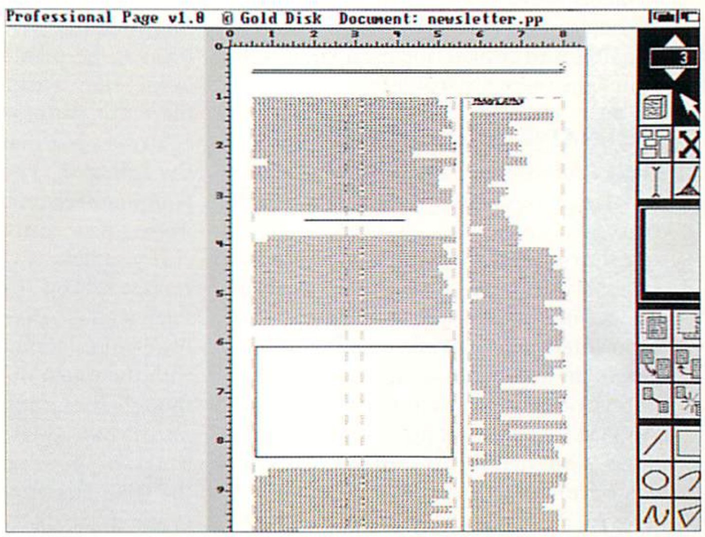
Now we need two boxes for the volume number and date. For easy typing, place the boxes just below the rectangles, one to the left and one to the right. Make the boxes about 1" × $\frac{1}{2}$". Type in "Volume 5, No. 3" (or whatever), then highlight and change to 10 point, left justification. In the other box type, say, "Fall 1989," highlight and change to 10 point, right justification. Using the Arrow tool, move the boxes up so the words fit just between the two rectangles at the bottom. You may find it helpful to magnify your page to 200 percent.

If you are going to be indenting your paragraphs, you will need to change the paragraph spacing. The default paragraph indentation is .5 inches, which is too much for most newsletter columns. A paragraph indentation of .25 to .3 inches works well in the majority of cases. So that you do not have to go back and change each box one at a time, set the new paragraph indentation in the Box/Alter/default menu: Set Tabs. Once you have flowed in your text and selected Paragraph: Indent from the Text menu, you will have to go back and highlight the headlines and the first sentence in each article and select Indent: None.

Let's assume we will be putting one major story and one of lesser importance on page one. Using the columns as guides (and Snap to Grid: On), create two boxes for the major story, going down to about eight inches. Use the line-drawing tool to draw a line across the bottom of those two columns. Create a box for a second headline just under that line and then create two more boxes for that story.

The space on the left of the page is very nice for subheadings and small graphics. Create a box about 1" wide, starting $\frac{3}{8}$" from the left and $2\frac{3}{4}$" from the top. Pull down about 2". Type into this box, say, "Survey shows 40% of repeat customers return because of newsletter." Highlight the words (or choose Select Box from the Edit menu) and change the point size to 18, the style to italic, and the justification to Right. For a graphic, make another box just below the subheading box, but this time, just for variety, pull the box over the text column about a quarter of an inch. The length of this box depends on the size of the graphic. Select the Permeable icon from the Box menu so that text will flow around your graphic. When placing a line or box right next to text, pull its handle toward the text just enough to ►





Sample templates for the inside spread. As we are using a two-column format for pages one and four, it is best to create a different format for the inside pages. The template on the left shows a three-column format with a rule setting off the outer column. The right template presents a slight variation, with a two-inch outer column and four-inch inner column. Whichever format you choose, mirror it on the other half of the spread.

add a little space between the line and the text.

THE INSIDE SPREAD

Load from the Page menu News2.tm. When planning the layout of pages two and three, remember that they will be seen together when the newsletter is opened up. So we will be considering the entire 11″ × 17″ page when deciding on columns, white space, graphics, and photos. (If you are using a linotronic, you can put these two pages together by changing the Print Specifications to 17″ × 11″ and altering your page size.)

Create a small box at the upper-left corner for the page number. Start at 1/4″ from the top and 1/2″ from the left. Use the keyboard to type a "2" inside the box, using either the text or headline style, in bold ►

A LITTLE "LOCAL" COLOR

WHILE OUR NEWSLETTER tutorial was designed to keep things simple, the fact of the matter is that Professional Page can do a great many more sophisticated things—not the least of which is to provide full color options to desktop publishers. No matter what type of publication you are putting out, the addition of color to your printed work will be a bigger draw for attracting readers.

Of course, many desktop publishers use color all the time. We send our artwork that was produced in black and white to the printers, and we tell them which areas to print in black and white and which to print in color. We have even been known to laboriously cut amberliths for each additional color. The printer then makes a negative and a plate for each color and prints the piece accordingly.

ALL-IN-ONE COLOR SEPARATIONS

With Professional Page, however, and a PostScript typesetter such as the Linotron, we can now produce those negatives ourselves. Let's assume you want the type on your page to be printed in black and white and certain borders and clip art printed in blue. While in the program, create the areas you want printed in blue in any other color than black. (Because the PostScript output itself does not print color, you need only differentiate the colors you plan to use.) With the options provided in the Project/Output/PostScript menu, you can separate these colors and have a negative printed on the PostScript typesetter for each color. When we want a piece that has two, three, four, even twenty colors (specifically chosen "mechanical" colors to be printed separately on the same page), Professional Page will separate each color and send that information to the output device. A plate-ready negative is then made for each color.

Making our own negatives not only saves us the cost of the negatives normally produced out of house by the printer, but also gives us more control over the final piece, and because they are computer-generated, they are mechanically perfect.

To print the full spectrum of color, printers must make a "color separation," which means they need to convert the art into four negatives of different dot patterns to be printed in yellow, magenta, cyan, and black. The combination of these dot patterns in the four "process" colors is what makes up all the colors of the rainbow. The time, precision, and equipment required for color separations make this a costly affair.

If you have an Amiga paint program, however, you can take advantage of Professional Page's ability to perform four-color separations automatically, with the touch of a requester button. Although the graphic you have imported into Professional Page from your paint program shows up as grays on the screen, the color information is retained in the original art disk. After you have made the selections in the requester telling Professional Page that you want four-color process, the program will send the information from your page and from the art disk to the Linotron. Or you can use Professional Page's color palette to create the colors you want, which will then be separated in the output stage. You can even make subtle alterations in the mix of process colors by manually changing their percentages so that the final product will come out exactly as you want it to be.

ONE-STOP PRINTING

Professional Page calls this technology "electronic pre-press," as opposed to desktop publishing. Vel Evans, who owns Vellum Print and Graphics Services Inc. in Concord, Ontario, calls it "one-stop shopping," or "the democratization of the printing business":

"Now the designer or the production person has total control of the process—right up to the final stage. The color separations are machine precise, and the savings in time and money are well worth looking into."

Five years ago, Vellum was a traditional typesetting and graphics firm. Evans latched onto desktop publishing as soon as she saw its potential, and when she first saw what Gold Disk was envisioning in terms of color desktop publishing, she felt it made perfect sense. In fact, Vellum was the first in North America to use the system.

"We're the guinea pigs, really. We sometimes have to convince our printers that we know what we're doing and that they should just trust us. And some of our clients aren't very clear about what four-color process is, so it takes some explain- ►

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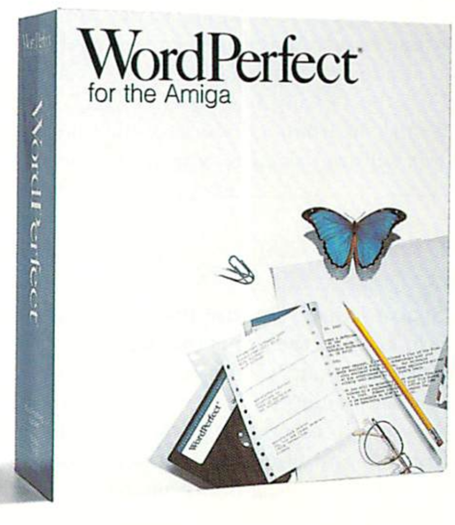
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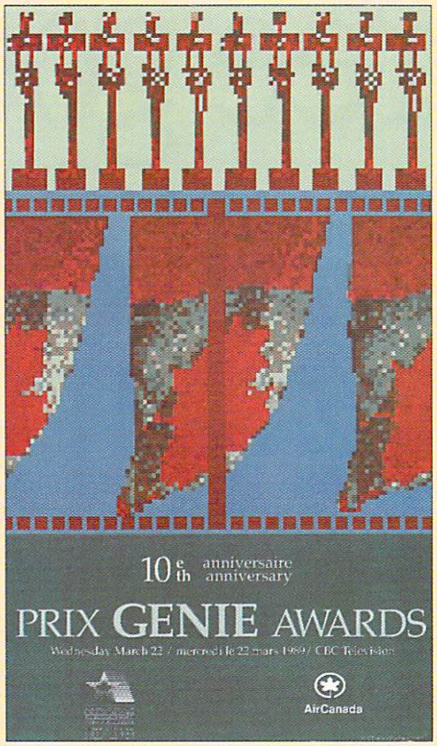
ing to show what the Amiga can do.

"I'm a certifiable techno junkie. Our company has been built on the cycle of constant upgrading and change, so we have grown quite rapidly." Vellum is a full-blown graphic-production house that provides everything from traditional typesetting to final color separations using the Amiga system. But Vellum has made its reputation on servicing the Amiga marketplace. "We are also a service bureau for people who use Amigas," says Evans. "They can bring us a disk or modem us their files, and we will print the linotronic output for them and ship back the camera-ready art or the plate-ready negatives or positive film, or we can provide positive transparencies for slides. It just depends on what they need."

AWARD-WINNING VERSATILITY

When Vellum was contracted to do the poster for the Tenth Anniversary Genie Awards (Canada's equivalent of the Oscars), they produced it entirely with the Amiga (see above). Artist Charles Patcher created the original design in DeluxePaint II with his own Amiga. "We put the $1\frac{1}{2}'' \times 3''$ graphic into Professional Page and enlarged it 800 or 900 times," explains Evans. "We color corrected the original DPaint color palette to match the final print color requirements. We added the type elements for the poster and created the color separations. Then we generated the plate-ready negs directly off the linotronic.

"But the real beauty of the system is its flexibility. Once we had completed the poster, the same color image and separations were regenerated at a different size for the cover of a book and regenerated again at a different size for the label of a wine bottle.



Produced entirely on the Amiga to promote the Genie Awards, the poster is a good ad for the computer too.

"What is unique about this is that the final product was completely computer-generated from beginning to end. Untouched by human hands, it was blown up, color corrected, and color separated in several different sizes. We didn't have to remake the artwork, we didn't have to reshoot the film or restrip the film. Once it was put into Amiga format, it was simply spit out in different configurations."

Multipurpose imaging is the Amiga's greatest advantage in terms of both its cost-effectiveness and the time it saves. "The best example I can give you," says Evans, "is when a division of Air Canada was putting together a series of conferences. They needed their own logo and the conference theme on all the materials: name badges, binders, invitations, brochures, thank-you cards, pencils, sweatshirts—the works. We created the graphic image, scanned in their logo once, and in 21 days produced the camera-ready art, the plate-ready negs, positive film for silk-screening, slides for the overhead slide presentations, and video titling to be merged with their animated video."

Service bureaus like Vellum Print and Graphic Services, together with the color-separation tools in Professional Page, offer Amiga desktop publishers just about every option possible in terms of color production and camera-ready art. We can purchase whatever input or output devices our budgets allow, and the service bureau can fill in the gaps.

Among the numerous pieces of production equipment Vellum uses are a Linotron 300, a flatbed scanner with ASDG's Professional ScanLab interface, a video scanner, a laser printer, and a Polaroid Palette slide recorder. The PostScript typesetter is necessary for color separations. The scanners take pictures of any photo or artwork to be placed into your project. The different types of scanners require different amounts of memory and, of course, produce different results.

"The job is customer controlled from beginning to end," says Vel Evans, "and we are here to help get it done as quickly, cost-effectively, and professionally as possible." And her Amiga and Amiga DTP equipment play a key role in doing just that. □

—D.R.

or in regular. With Snap to Grid: On, use the Line tool to draw a 2-point line across the top of the page, $\frac{1}{2}''$ from the top. Just under that, $\frac{1}{8}''$ down, create another line using a $\frac{1}{2}$-point rule.

Select the Box tool for photo placement at the top left. Select Line Weight: 1 point. Start at the upper-left corner of the left column and drag the rectangle across the width of the column guide and down to $3\frac{1}{3}''$. Now create a box using the remainder of that column for text. Assuming your next story will take up the next two columns, create a box for the headline that goes across the two columns. Create two more boxes in those columns going down to about $7\frac{1}{2}''$.

In the space remaining, we will create a box that ►

might be used for special announcements. Select the Rectangle tool using Line Weight: 1 point. Select Fill Completely, and Fill Color 20%. Draw the rectangle over both columns and down to the bottom margin. Create a box for a heading inside this shaded box, then one more box for the type.

Load page three and place the lines at the top and the page number at the upper-right corner. Create a box that starts at the upper-left corner of the first column, going across two columns and down $2^1/_2$". Below that, create a place for a photo just as you did on page two, two columns by $2^1/_4$". Create one more box at the bottom, spanning the two columns.

We are making the assumption here that you will have three seperate short articles for this space, or one at the top and another with a photo in the middle of it.

This time I did not create seperate boxes for the headings. You can go into your text, highlight the headlines, and change the font style to bold, as well as the type style and size.

Create two more boxes, one for the headline and one for the text, on the third column. We will place a graphic just under the headline at the right side of the column. Let's assume you found a terrific piece of clip art and you would like the text to wrap closely around it. Put a sheet of graph paper over the art and trace the art onto it. Set the grid to the same measurements as the graph paper. Now place several small boxes at the edge of where the art will be. But before you put on all those boxes, select Box/Alter/default and click on the Permeable icon. That way, when the text flows into the column, it will come up fairly close to where your graphic will be. To make it even tighter, I sometimes select Hyphenate from the Text menu just at the edge of the graphic.

Page four is fairly straightforward. Draw your line and place the page number. If your newsletter gets folded, in thirds or in half, you need to arrange the columns and the mailing section accordingly.

Also, remember that people will see this page first if it is folded, so it is a good idea to pay close attention to what is placed here. You could make your headline a little bigger than usual, use a shorter article, or include an interesting photo or graphic. We have not discussed color at all, but if you can afford to use two colors, perhaps you could place a colored screen on the back—over the type if there are no photos; otherwise place it over the mailing section. If you want to use colored screens anywhere in the newsletter, draw a rectangle but leave it open. The colored screen has to be produced separately if it is going to lay over black ink. Place a box in each column and draw a line all the way across underneath. (See the sidebar, "A Little 'Local' Color," for a more detailed discussion of color possibilities in Professional Page.)

LET'S RUN IT FOR REAL!

Your templates are now ready. Of course, the boxes and photos will change somewhat in each newsletter, but the general format will not, and you have saved yourself a lot of time by creating these pages and saving them to load with each new newsletter.

To start a newsletter project once you have created your templates, select New from the Project menu. Then select Page/Create/Current, and click Page1.tm from the requester. Repeat this procedure for the next three pages. Select Project/Save As. . . and give a name to your project. Return to page one and specify from the Type menu the typeface and sizes you will be using, the justification, kerning (spacing between letters), and paragraph indentation. If you have used any embedded commands, be sure you have set the correct Text Format from the Preferences menu. Now select Project/Import/Text and click the project you have saved in your word processor. Finally, select Edit/Paste and with the Edit tool click the first column in which your text will flow. The text automatically flows into the boxes in the same order as they were created in the template.

Once you have flowed in your text, look over it carefully, changing indentations, hyphenating when necessary, changing headline sizes and styles, and so forth. Look at the right margins of your columns to see if there is too much space at any of the line endings; this can be corrected by moving a word back from the next line and then breaking it with a hyphen. Check to see whether the last line of a paragraph starts at the top of a column or whether a new paragraph begins at the bottom of a column. Called "widows," these are to be avoided wherever possible. Make adjustments by changing the column length, by using tracking, line spacing, paragraph spacing, and hyphenation to squeeze in a little more type or use up just a little more space. Be conservative, though. These adjustments should not be noticeable.

Practice can make perfect in desktop-publishing because there is so much opportunity to experiment and to vary things. Once you have become adept at moving around within Pro Page, you should be able to put out a quality newsletter. And when you have mastered the mechanics of the four-page newsletter. . .well, there may be no limit to where you can go. ■

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"ABOUT-FACE" in Amiga Fonts?



Our guide to Amiga fonts sets the type scene for you, outlining the full range of printing possibilities for your desktop publications. And while availability of professional-quality typesetting fonts on the high end is still a major problem for Amiga DTP, recent breakthroughs have given Amiga-generated publications a much-needed "face" lift.

AS A RELATIVE newcomer to the desktop-publishing scene, the Amiga has had to play catch-up with IBM's PC and Apple's Macintosh. While both quantity and quality of desktop-publishing software have been stumbling blocks, the real glaring weakness in the Amiga market has been on the output side: The scarcity of professional-quality typesetting fonts has crippled the appearance of Amiga desktop-generated publications.

The potential strengths, however, of the Amiga for DTP applications—multitasking environment and superior graphics—are winning out. We are finally seeing some meaningful improvements on the fonts front, although much more—in terms of availability and further enhancements in quality—must be accomplished.

As we get into this article we will examine these improvements on the high end—specifically, increased support for PostScript and the introduction of structured fonts. To begin, however, we will establish a very brief overview of the Amiga fonts situation and see, first, what Amiga desktop publishing has to offer on the lower end of the output scale.

Bitmapped Blues and the Bad Old Days

When the Amiga was first released in 1985, there were very few choices of fonts for users. A set of about a dozen fonts was (and is) included free with Workbench. Although they were named after gems (Sapphire, Diamond, Topaz, and so forth), you may have found them to be less than a treasure. The basic Amiga fonts are a typographical bad blind date: coarse, small, and ugly.

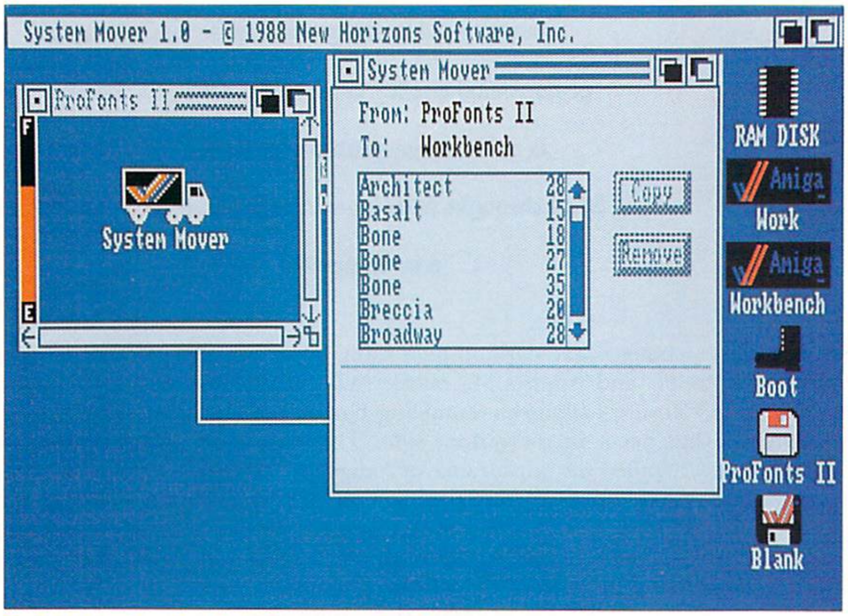
Fortunately, in the last two years, as Amiga desktop-publishing and desktop-video software has come into its own, a great many new Amiga fonts have been produced to serve the needs of the DTP enthusiasts and animators who use such software. The majority of Amiga users have access to dot-matrix printers, and the Amiga is now fairly well supplied with fonts that will help give good dot-matrix output from paint, desktop- ►

By Jeff Evans

publishing, or word-processing programs.

The kinds of fonts we are talking about here are all "bitmapped" fonts. For instance, the first font you see on the monitor when you boot up any standard Amiga is the Topaz font. It is a good example of a bitmapped font, which is stored in the Amiga's RAM. These bitmapped characters are made up of patterns of dots, or pixels. Because an Amiga bitmapped font is a pattern of pixels that is displayed on screen, it can be made into a part of a regular Amiga IFF image, or one or more frames of an animation. You can save bitmapped text as part of a picture you create with a paint program, or print it from a printer, or record the screen image of the text to videotape. Bitmapped text will always tend to look rather coarse or jagged when printed, however, unless the bitmapped letters are very fine and detailed, or unless they are printed very small so that the "jaggies" are less apparent.

Bitmapped text can be of sufficiently good quality for professional video and slide production, but, in general, print is too unforgiving for you to get away with using bitmapped text for professional-quality typesetting. It may, of course, be fine for proofing, in-house publications, and other "low-end" desktop-publishing work.



ProFonts trucks extra fonts to your applications.

There are literally hundreds of bitmapped fonts available for the Amiga. The most attractive and best designed are probably the Kara Fonts (Kara Computer Graphics) created by Kara Blum. For sheer variety, the Masterpiece Professional Font Collection (ARock Computer Services) may be the most comprehensive set of display fonts. The developer of the ProWrite word-processing program (New Horizons) produces some very clean ProFonts packages that provide excellent dot-matrix text output. And, of course, most of the companies producing desktop-publishing programs, such as Gold Disk and Soft-Logik, offer good-quality bitmapped font packages.

Top-Quality Type: PostScript and Structured Fonts

SOME FONTS ARE actually located on the printer itself; the text you see on the Amiga screen is a "screen font," which only approximates the final printout. Some 24-pin dot-matrix printers have their own fonts, and these will give better and neater resolution than a bitmapped font. Laser printers, such as PostScript-compatible and Hewlett-Packard models, have high-resolution fonts built into the machines to allow for near typeset quality output. 300-dot-per-inch laser printers are most common, though some 400- or 600-dot-per-inch lasers are also made. You can also use the Amiga to print text from high-resolution (up to 2540 dots per inch) PostScript-compatible typesetting machines. Desktop-publishing programs such as Professional Page (Gold Disk, $395, 1MB) and PageStream (Soft-Logik, $199.95), and the better word-processing programs such as WordPerfect (WordPerfect Corp., $395), ProWrite (New Horizons, $124.95), and excellence! (Micro-Systems Software, $299.95), will all support PostScript laser-printer and typesetting-machine fonts, and some of these programs will support Hewlett-Packard lasers as well. (For a more detailed description of PostScript, see the sidebar "A PostScript Primer." For more on programs supporting PostScript, see the sidebar "Amiga Software and PostScript Support.")

A major advantage of PostScript and structured fonts (discussed below) is that because they are structured objects, as opposed to bitmaps, they can be manipulated and moved around easily, much like objects in a 3-D animation package or a CAD program. This means that it is easier to adjust the spacing (kerning) between letters to give them a more pleasing appearance. PostScript outline fonts can be scaled up and down in size without losing detail, while bitmapped fonts will either drop out details or begin to look chunkier as they are grabbed and resized as brushes in a paint or animation program. For professional-level desktop publishing, you need the best available typesetting software, fonts, and output devices. For example, Professional Page, a wide assortment of Adobe fonts, and a laser printer or a Linotron 300 typesetting machine would give you the tools to do first-rate book and magazine publishing.

Screen Fonts: What You See Is Sort of What You Get

When the fonts used for the final printout are resident on the printer, the text you see on screen is rendered by a "screen font," a bitmapped font that can scale up and down in size to give you a more-or-less accurate approximation of what the final printout will

look like. Screen fonts are essential to desktop-publishing programs, because they allow you to preview a page layout on screen before printing it. This is the basic idea behind the term "WYSIWYG" (what-you-see-is-what-you-get): What you see on screen should look like what you get from the printer. In reality, the WYSIWYG displays of printer-resident fonts provided by most programs are not all that accurate. For example, while Professional Page currently supports about 80 Adobe PostScript fonts, it has only ►

A PostScript Primer

POSTSCRIPT IS A programming language that was developed to describe how graphics were to be placed on paper by a raster printing machine. Pioneering work began in 1976 with John Warnock at the Evans & Sutherland Computer Corporation, and continued with the assistance of Martin Newell at the Xerox Palo Alto Research Center. In 1982, Warnock and Chuck Geschke formed Adobe Systems to develop PostScript as an interpreter to describe two-dimensional pages for output on a raster printer.

This may explain a little of why PostScript is printer-resident, rather than computer-resident like most programming languages. Now, of course, the printer most commonly associated with PostScript is the laser, which can achieve printing resolutions from 300 to 600 dots per inch (dpi). Recently, PostScript has found its way into typesetting machines, such as those made by the Linotronic Corporation. Here resolutions may range from 1200 dpi to more than 2400 dpi.

Because the output from a PostScript program is independent of the printer, the advent of output service bureaus has made it possible for the owner of a personal computer and a desktop-publishing program to generate very high-quality, camera-ready copy at a reasonable cost. Such businesses offer the use of a laser printer or a typesetting machine for a set fee per page. The user needs only to provide a PostScript file in a compatible disk format or to deliver the file to the service bureau via modem.

POSTSCRIPT FONTS

PostScript's standard font set, which is built into every PostScript printer, has a total of 13 typefaces. These fonts consist of three font families, Times Roman, Helvetica, and Courier—each of which has four faces—plus a symbol font set consisting of the Greek alphabet and a variety of mathematical and typographical symbols. Thus, PostScript considers the regular (roman), italic, bold, and bold-italic type attributes to be separate typefaces. The Times Roman and Helvetica families are both proportionally spaced fonts, while the Courier family is fixed pitch. Most PostScript printers come with additional built-in font sets (many have 35 variations on 9 different font families).

The built-in fonts are all analytical fonts, which means that the character shapes are all based on mathematical formulas rather than on fixed bit patterns. The definition of the standard font set calls for a font height of only one point—although it is fairly simple to change the size of a PostScript font to fit your needs.

You can download additional fonts to PostScript printers. These are usually analytical fonts whose mathematical descriptions are written in PostScript. In general, the operations you can perform on the built-in fonts can also be done with the downloaded analytical fonts. Working with the built-in fonts is usually faster, though, as their descriptions are written in machine code. The Adobe fonts also have built-in "hints" that improve their appearance when you use smaller point sizes—a kind of compensation for the limited resolution of the output device when it is printing the smaller sizes.

Like the Amiga, PostScript can also handle downloaded bitmapped fonts. Also like the Amiga, the bitmapped fonts cannot be scaled without affecting the quality of their appearance.

PostScript contains many operators that enable a program to find out the various dimensions associated with each character in the font. Before an Amiga program can use a PostScript font, it has to know all of the font's characteristics. The font's dimensional information is provided in a metric file. Metric files must be present for every PostScript font that the application program will use. If the program also provides a what-you-see-is-what-you-get working environment, then an Amiga bitmapped screen font—with the same characteristics as the PostScript font—is also required. Because Amiga screen fonts come in discrete point sizes, the range of usable PostScript point sizes is limited as well.

A POSTSCRIPT BIBLIOGRAPHY

If you wish to learn more about PostScript, consider these reference books:

Understanding PostScript Programming, 2nd ed., by David A. Holzgang (Sybex, 1988, $24.95). A detailed, introductory tutorial directed at the reader with little or no programming experience.

PostScript Language Tutorial and Cookbook, Adobe Systems Inc. (Addison-Wesley, 1985, $16.95). Often referred to as the "Blue Book," this is one in a set of three books provided by the company that invented PostScript. It provides a good introduction to the language and a sizable collection of useful examples.

The *PostScript Language Reference Manual* ($22.95, the "Red Book") and *PostScript Language Program Design* ($22.95, the "Green Book") round out the Adobe set. The former is the official reference book for the PostScript language, while the latter is a programmer's manual containing numerous examples and techniques for advanced PostScript programmers.

Real World PostScript, edited by Stephen F. Roth (Addison-Wesley, 1988, $22.95). A collection of articles by a variety of experienced PostScript users. Topics include programming and design, working with type, gray scales and color, as well as some sample projects. □

—Morton A. Kevelson

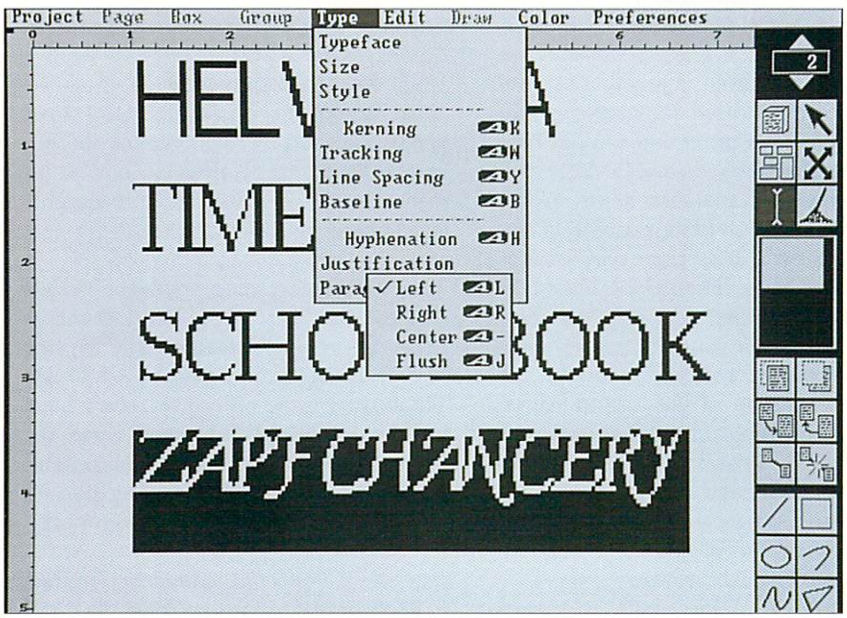
Morton A. Kevelson is an electrical engineer who contributes articles and reviews to a number of computer publications. Write to him c/o AmigaWorld, *Editorial Dept., 80 Elm St., Peterborough, NH 03458.*

two rather chunky-looking screen fonts.

The way that a PostScript desktop-publishing program relates the screen display to the printout is by means of a "metric file" (also called a Font Width Table) for each font. The metric file is a list of the proportional widths of the characters in a font. For example, the metric file can tell the computer how much space the letter "A" in the Helvetica typeface, in 12-point size, will take up when it is printed. This spacing information allows the program to calculate how much space it should give to this letter both on the Amiga's screen display and in the page that is to be printed. Gold Disk's Professional Page comes with metric files for 19 PostScript fonts, and Gold Disk publishes an additional set of metric files for about 60 more PostScript fonts.

MORE POSTSCRIPT SUPPORT, PLEASE!

While PostScript is described more fully in the sidebar, what is important to note here is that PostScript is a computer language invented to describe page layouts, graphics, and text. The outlines of PostScript font characters, instead of being made from patterns of pixels, are composed of mathematically described lines and curves. This means that when they are



You can manipulate Professional Page characters in many ways.

output from a PostScript printer, the letter forms are drawn as smoothly as the printer resolution allows. This means in practice that PostScript text output can be of professional, salable quality if it is printed out from a high-resolution printer.

Adobe Systems is the pioneering California firm that developed the PostScript page-description language and made desktop publishing possible on the Apple Macintosh. Adobe also developed the first PostScript-compatible fonts. The usual set of fonts (35 variations on 9 basic fonts) that comes with most PostScript laser printers is licensed from Adobe. Altogether, there are a few hundred PostScript fonts available from Adobe, with more being added all the time. Other companies, such as Compugraphic and Monotype, have developed PostScript-compatible versions of their fonts. If you own a Mac or an IBM, you can buy additional PostScript fonts on floppy disks. These fonts can be downloaded from a personal computer into a laser printer's memory, so that you can have access to a wide range of additional fonts. Unfortunately, Adobe has not released any fonts in Amiga disk format, which leaves Amiga desktop publishers somewhat out in the cold. As described below, however, there are work-arounds that can give Amiga users access to Adobe and other PostScript fonts despite these obstacles.

At the moment, the only PostScript fonts available in Amiga disk format are limited selections from a few companies such as S. Anthony Studios and Soft-Logik. (See the sidebar "Amiga Software and PostScript Support" for more information on these companies and products.)

STRUCTURED FONTS

Some Amiga programs use "structured" fonts, where characters are made from mathematically defined lines and curves, but where the fonts are resident on the computer, rather than the printer. For example, the Professional Draw (Gold Disk, $199.95, 1MB) illustration program comes with two structured fonts (licensed from Compugraphic, a major manufacturer of typesetting equipment) that can be loaded into the Amiga's memory. The computer then tells the printer how to draw the letter forms, rather than relying on a font resident in the printer. Structured, computer-resident fonts can have some notable advantages over printer-resident fonts. For example, the letters can be "printed" to the monitor screen, as well as sent to the printer, so that the WYSIWYG display will be much more detailed and accurate than if a coarse bitmapped screen font is being used. The next release of Professional Page is supposed to use structured screen fonts instead of the chunky bitmapped fonts that are currently offered.

PageStream uses structured fonts to give detailed screen displays and smooth dot-matrix output. It is also possible that an Amiga version of Calamus, a German desktop-publishing program that makes very sophisticated use of structured fonts, may be developed for use in North America sometime in the future.

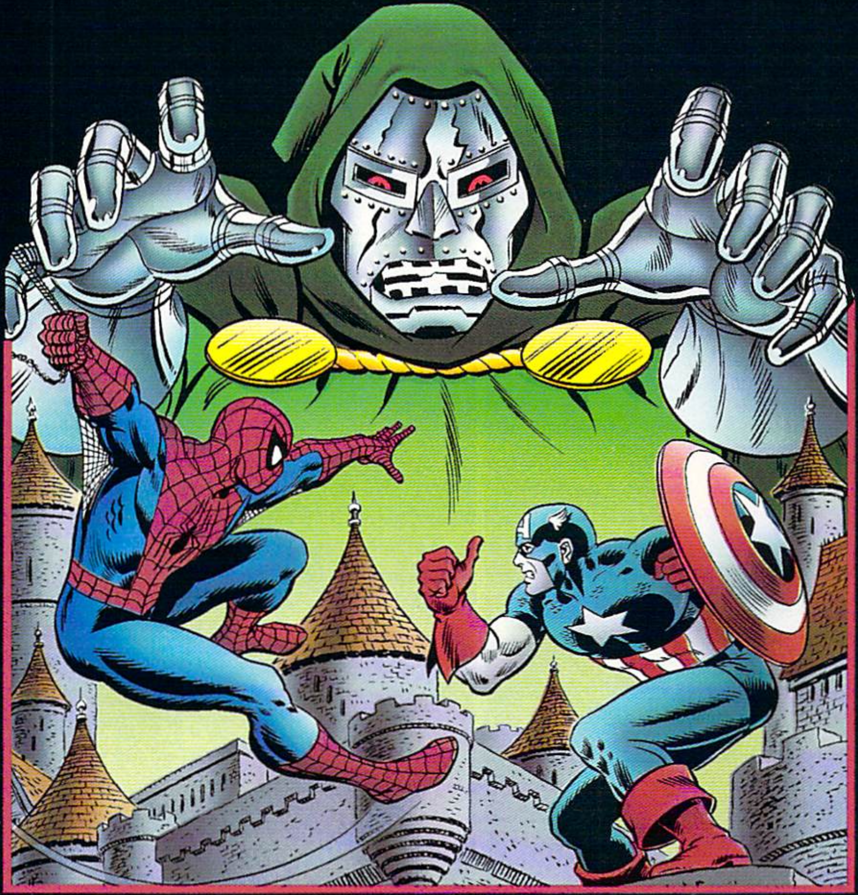
Getting the Most From Your Fonts

THE AMIGA FONTS that come with Workbench are stored in a directory called "Fonts." Typically, desktop-publishing programs come with their own fonts also stored in a Fonts directory. Each Amiga font is ►

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composed of its own font "subdirectory" and a font file in the main Fonts directory.

Normally, to find a particular font, the Amiga will look only in the Fonts directory of the Workbench disk that was used to boot up the computer. If you have additional fonts in some other directory or on some other disk, the Amiga will not automatically go find them. If you have purchased additional font packages, you may find it confusing to figure out how to get your program to find these new fonts and make use of them.

This is where novices may feel like they are in the midst of some kind of "font jungle." Yet, even without becoming a whiz at using the CLI and mastering AmigaDOS, it is still possible to find your way around if you remember a few basic points:

- Remember where the fonts are (which disk drive, which partition or directory within the drive).

- Learn how to tell the computer program you are using where to look for the fonts. Some programs

Continued on p. 44

Amiga Software and PostScript Support

INCREASING POSTSCRIPT support in the Amiga software market has largely been driven by stronger showings among Amiga desktop-publishing programs over the past year or so. And although you might expect such support to be confined only to page-layout software, you will find that other new Amiga programs, particularly paint packages and word processors, are also embracing PostScript.

The extent of PostScript support varies among different applications. At the lowest level, a program will simply output an entire document, including fonts and graphics, as a pure bitmap. Although this file can be printed on any PostScript-equipped printer, the final resolution will remain the same as what was seen on the Amiga's display screen. Fonts and graphics created at 75 dots per inch will still look like 75 dots per inch even when they are printed at more than 2400 dots per inch on a Linotronic.

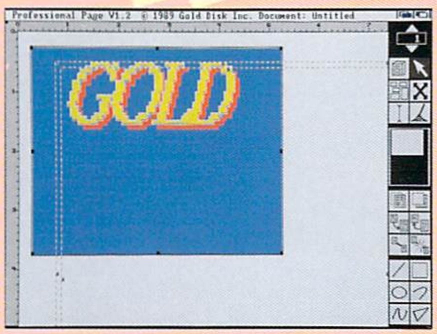
The PostScript output of many structured-graphics programs or page-layout programs, however, is something different. Here the output represents a mathematical description of the original page. As such, the PostScript files created by these programs can take full advantage of the maximum resolution available on the PostScript-equipped output device.

Amiga software supporting PostScript is presented below under four general categories. Remember, the extent of that support can vary widely, as explained above.

Utilities

PrintScript 1.01 (Pixelations, $89), an Amiga-resident PostScript interpreter, lets you output PostScript files on any Preferences-supported dot-matrix printer. PrintScript includes its own versions of the standard Adobe font set (written, of course, in PostScript). The current version of PrintScript, however, does not support color PostScript. PrintScript is an excellent way to start using PostScript without investing in an expensive PostScript printer.

A variety of stand-alone PostScript utilities are provided by S. Anthony Studios under the LaserUp! trademark. Laser Up! Utilities, Volume 1 ($49.95) lets you



Color fonts liven up your text.

format standard text files for output to a PostScript printer by using embedded format commands. Utilities reads in the modified text file and converts it into a standard PostScript file.

LaserUp! Print 1.2 ($89.95) takes any IFF bitmapped image, including HAM format, and outputs it as a PostScript file. Images can be output with up to 48 levels of gray. Four-color process separated output is available, as well. An easy-to-use mouse interface allows you to perform almost unlimited cropping, scaling, and positioning. Full control of image contrast is also easily accomplished. The distribution disk includes a selection of borders and halftone screen types, and you can even add your own centered titles. Files can be saved in Encapsulated PostScript format (EPS) for import into other programs, such as Professional Page.

LaserUp! Plot 1.2 ($49.95) converts Aegis Draw files into PostScript format. Files can be output for printing on a PostScript printer or they can be saved in EPS format.

Paint Programs

Express Paint 3.0 (PAR Software, $139.95) is the only bitmapped paint program that offers PostScript output at the present time. Because the images created by Express Paint are pure bitmaps, the resolution of the final page will depend on the size of the bitmap you are working with. Express Paint does support oversized bitmapped drawings, whose dimensions are limited only by the available memory. Thus, it is possible to create an image whose dimensions are 2400 × 3000 pixels and thereby take full advantage of the 300 dot-per-inch resolution of a PostScript laser printer. Express Paint also supports color PostScript output, although the QMS ColorScript 100 printer is the only color PostScript printer I know that has been tested with the program. You can send PostScript output from Express Paint directly to disk, as well as to a PostScript printer. Note that bitmapped images as PostScript files tend to be rather large. It is possible a large-size bitmap could exceed the 880-kilobyte capacity of an AmigaDOS disk.

Structured-Drawing Programs

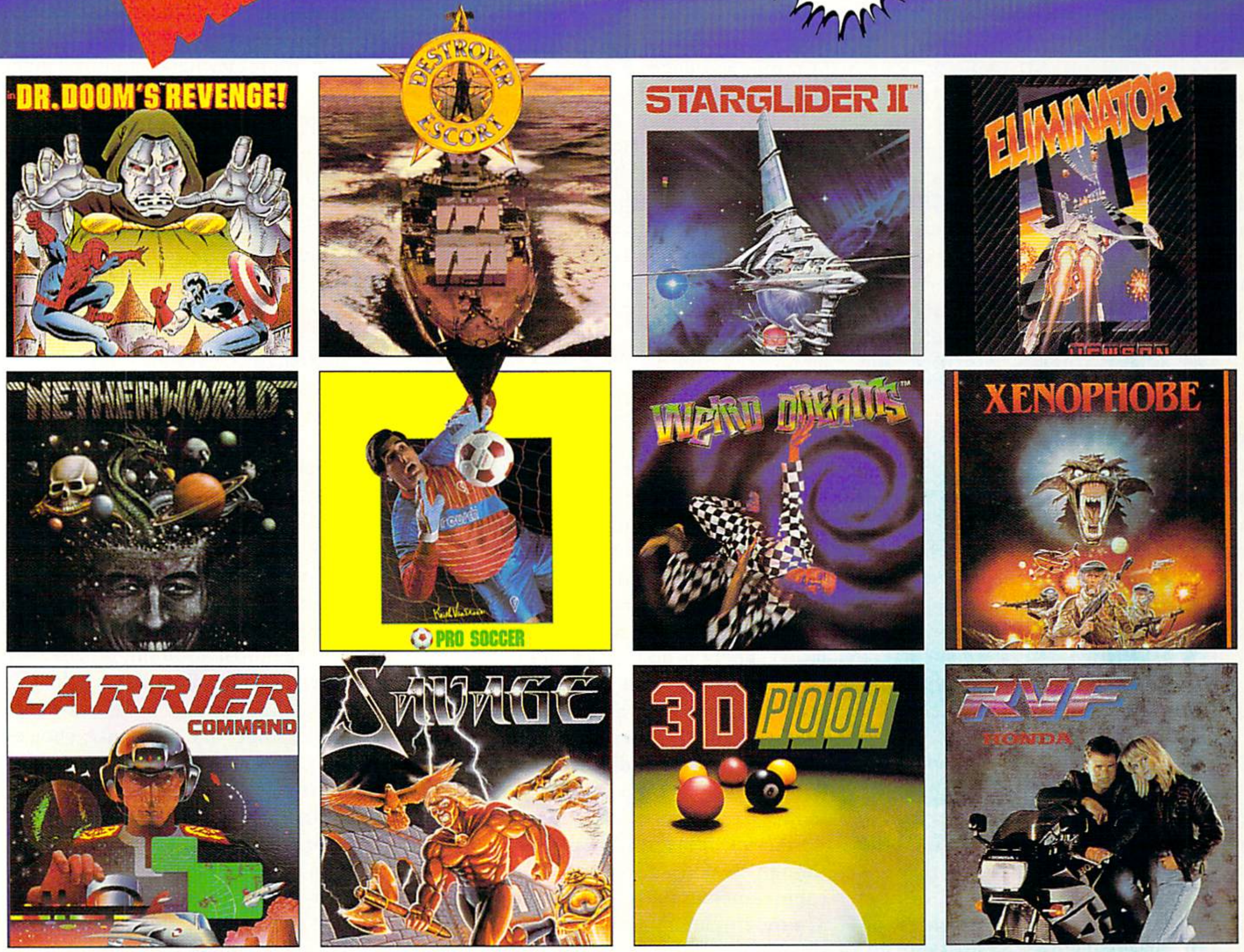
Professional Draw (Gold Disk, $199.95, 1MB) provides the same PostScript-out- ►

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put support as the company's companion page-layout program, Professional Page. Text, however, is limited to two analytical fonts, Times and Univers, in a preset range of point sizes (24, 36, 48, 60, 72, 80, 96, and 144 points). Once text is incorporated into a document, it is rendered as part of the drawing's structure rather than as text characters. While there is nothing wrong with this approach, be prepared to deal with Draw's limitation in this respect if you have become accustomed to the wide range of fonts and styles available with Professional Page.

Strictly speaking, 3D Options (Rainbow's Edge, $49.95, 1MB) is not a structured-drawing program. It is actually a utility that can automatically convert a bitmapped image into a structured-drawing format. Along with IFF bitmapped images, 3D Options can also read MCAD and Aegis Draw format images. Once the images have been processed, 3D Options can save them as structured graphics in PostScript format as well as in MCAD, Aegis Draw, and Videoscape file formats.

WORD PROCESSORS

excellence! (Micro-Systems Software, $299.95) will output in black and white to a PostScript printer or to a disk file. Font support is limited to the four type families in the standard PostScript font set. Text size is restricted to 8, 12, 16, and 24 points. If you use any of the bitmapped Amiga fonts or bitmapped graphics, these will be rendered at the Amiga's screen resolution on a PostScript printer.

ProScript (New Horizons, $49.95) is a PostScript-output utility designed for use with the developer's ProWrite word processor ($124.95). It allows you to read in a ProWrite IFF-format text file and send it to a PostScript printer or to a disk file. Font support is provided in the form of a conversion table that automatically assigns the Amiga's bitmapped screen fonts to PostScript fonts. The default assignments convert the Diamond, Granite, and Opal fonts to Helvetica; the Marble and Ruby fonts to Times Roman; and the Topaz and all other fonts to Courier. Metric files are provided for the standard Adobe PostScript font families in 9, 10, 12, 14, 18, and 24 points. ProScript lets you select either 2, 4, 16, or 256 gray levels for bitmapped images that can be embedded in ProWrite files. You can print all text in black or choose text color for output on a color PostScript printer.

DESKTOP-PUBLISHING PROGRAMS

Professional Page (Gold Disk, $395, 1MB) provides excellent support of PostScript output. You can send pages directly to a PostScript printer or to a disk file. Output can be in black and white or in color PostScript, or it can be color-separated. Pages can be output as a negative image and they can be reversed as in a mirror image. Pro Page input and output both support the EPS format.

If you want your output color-separated, Professional Page also provides complete control of the color-separation process. It supports three- and four-color separations, as well as mechanical color output. You can select the output for each color individually, along with its screen density and screen angle. If you want four-color output, you can set the amount of under color removal (UCR) and gray component replacement (GCR). (UCR/GCR determines the percentage of the three process colors that will be used for the black component of the image.)

Professional Page offers a wide variety of PostScript fonts. The program provides metric files and screen fonts for a total of 19 PostScript font families (including the four standard PostScript fonts). There is no restriction on the size of the fonts, as point sizes are manually entered as numerical values. Unfortunately, your PostScript printer must have access to the additional fonts, and at present, neither Gold Disk nor any other manufacturer provides downloadable PostScript fonts in Amiga format (although, as noted in the article, there are some remedies that can be applied to get around this limitation). Professional Page does come with a utility program that creates a metric file for any Amiga bitmapped font. This allows the program to use standard Amiga fonts for its page-layout activities. In the absence of a corresponding PostScript definition, however, these fonts will be output on the PostScript printer as bitmapped images in the Amiga's screen resolution.

Professional Page also provides a limited set of structured-graphics drawing tools. Images created with these tools can be printed at the resolution of the PostScript printer. Professional Page does accommodate bitmapped IFF images, but these will be output as such on any PostScript device. Professional Page can now also import large bitmaps from scanners (in particular, Gold Disk's ProScan IX12), 300-dot-per-inch black-and-white images, ASDG-RESEP images, and 24-bit color images.

PageStream 1.6 (Soft-Logik, $199.95) offers reasonably good PostScript support, but in a somewhat customized manner with regard to text. You can send PostScript output directly to the printer or to a disk file. Pages can be output in black and white, as a mechanical color separation, or as a process four-color separation. There are no options, however, for setting screen angle or screen density, UCR/GCR levels. There is also no provision for individually selecting the mechanical colors that will be output—all the mechanical colors are output when you choose this color-separation method.

PageStream provides 10 PostScript font families. These are all written in PostScript and are output as a part of the PostScript files. Four of these typefaces are similar to the standard Adobe fonts, although you cannot use the actual standard Adobe font set. A full range of preset point sizes—from as small as 3 points to as large as 216 points—is available from the font menu. In addition, no less than a dozen style modifiers are available—including the standard bold and italics, as well as some more obscure choices, such as backslant (cilati), double underline, mirror, shadow, and reverse.

Although the new version, 2.0, of City Desk (MicroSearch, $199.95) was not available when this article was being put together, the program will be shipping by the time this appears in print. City Desk 2.0 has a laser utility that will create the necessary metric files for using PostScript fonts (35 versions on 9 basic fonts). Point sizes can be set from a readable minimum of 4 points to a usable maximum of about 200 points. Additional fonts can be added to City Desk, although the same disk-format limitations apply as with the other programs. □ *—M.A.K.*

from p. 40

are "smart" about this, and will help you, while with others you will have to use the ASSIGN command within AmigaDOS, or the FontAssign utilities included with various font packages.

• Become familiar with the different kinds of fonts you have (bitmapped, PostScript, or structured, non-printer-resident), and how your program uses them. A paint program, for example, will not let you use a structured font. A desktop-publishing program such as Professional Page will not automatically let you use bitmapped fonts (although there is a special option called "AnyFont" that will let you use bitmapped fonts for dot-matrix output). Some programs, such as PageStream, will allow you to use both bitmapped and PostScript fonts fairly easily.

• Move the fonts you intend to use frequently into a single Fonts directory on your program or Workbench disk, or into the Fonts directory on your hard drive. If you have more fonts than your program can handle, you should make several different Fonts directories, each with a different name, and divide up your fonts so that no directory has an unmanageable number of fonts in it.

The better Amiga software packages make it as easy as possible for you to find and use your fonts. For example, DeluxePaint III (Electronic Arts, $149.95, 1MB) has a completely revamped way of handling fonts. In the newest DPaint incarnation, when you click on the text gadget with the right mouse button, a font requester pops up. You can select the disk drive and drawer (directory) where the fonts you want are located, and then click on the font you want. A "Show" option will then display a portion of the font on screen, and you can then load the font into memory and use it. As a bonus, if you run the ColorFonts program before you start up DPaint III, color fonts will be previewed in their proper colors, and the program will present you with the option to change the palette instantly to suit the color font.

To locate your fonts and to move font directories and files to another disk (to a hard disk, for example), an AmigaDOS utility such as CLImate (Progressive Peripherals, $39.95) will make your task much easier. You can also use a public-domain equivalent of CLImate, such as Dirutil, to accomplish the same task.

Tricks of the Type Trade

You can generally assign a color value to a bitmapped font in a paint or animation program by selecting a color from the current palette and then typing the text on screen. In a desktop-publishing package such as Professional Page, you can either select a predefined color from the list of default colors, or define any of an infinite number of possible process colors using the "Color Define" option.

The Amiga also offers multicolored fonts. Presently, you can use the ColorFont utility included with some of the commercial font packages to enable you to create fonts containing up to sixteen colors in pictures or animations. Multicolored structured fonts are possible, but not yet available. A future release of Professional Draw should offer graduated color fills and radial color fills for structured text.

The biggest font headache for Amiga desktop publishers is the difficulty of using the additional PostScript fonts available for use with laser printers. As mentioned earlier, very few PostScript fonts are available in Amiga 3½"-disk format. If you have an A2088 Bridgeboard (Commodore, $699.95), however, you can download additional PostScript fonts from the Bridgeboard to the laser printer, and then access them from the Amiga. For example, Barbara Andrews, a Toronto designer who uses Amigas to create corporate newsletters, needed to use the Garamond font to suit a client's requirements. She bought the Adobe Garamond font in IBM 5¼"-disk format, and then used a nine-pin cable to download her font to a QMS laser printer. She could then print documents created with Professional Page via the Amiga's serial cable.

Although there is no Mac "bridgeboard," there is a Mac emulator, A-Max (ReadySoft, $199.95; see review in this issue, p. 12), which with the necessary Mac ROMs and system software can provide a similar solution for using PostScript fonts in Mac disk format.

Another way to deal with the problem of font availability is to create your own fonts. There are two very good bitmapped-font editors for the Amiga—FontWorks (ACS Software, $99.95) and The Calligrapher (InterActive Softworks, $129.95). Both packages will allow you to make single-colored bitmapped fonts, or multicolored ColorFonts, and to grab brushes as fonts. FontWorks, the more recent of the two, offers a very convenient user interface, as well as some features that Calligrapher lacks. As far as creating professional-quality PostScript fonts, however, the current situation is less promising. InterFont (Syndesis, $119.95) is the only structured-object editor for the Amiga. The program was designed originally to let Amiga users create structured lettering for CAD and 3-D animation production. InterFont works extremely well for these purposes. As far as being a typesetting-font editor is concerned, however, InterFont is sadly lacking when compared to Fontographer, the equivalent package on the Macintosh.

A Prescription for Future Progress

The most pressing needs where Amiga fonts are concerned are for high-quality typesetting fonts in Amiga disk format, better typographic and illustration software to manipulate those fonts, and a first-rate PostScript or other structured-font editor for creating new fonts. Some interest by Adobe Systems or other major developers in developing Amiga versions of their products would be very useful. (Compugraphic Corp. has recently become much more forthcoming ►



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about cooperating with Amiga developers.)

It would also help if AmigaDOS and various applications programs were more intuitive and friendly in assisting the average user to find and use fonts from various sources. DeluxePaint III is an excellent example of a program that makes using bitmapped fonts a breeze.

In addition, if all bitmapped text could optionally be treated as structured objects, so that good kerning and letterspacing could be accomplished easily, it would make high-quality video titling and slide production on the Amiga simpler and more effective.

Despite the remaining limitations, the Amiga has come a long way in becoming capable of handling text for different kinds of graphic communications, and whatever level of desktop publishing you are interested in doing, there are probably an increasing number of paths for you to follow through the font jungle. ■

Jeff Evans is an animator, writer, and teacher who has been using the Amiga for desktop publishing since 1987. He is co-founder of Vellum Print, Canada's first all micro-computer-based typesetting company. Write to him c/o AmigaWorld *Editorial, 80 Elm St., Peterborough, NH 03458.*

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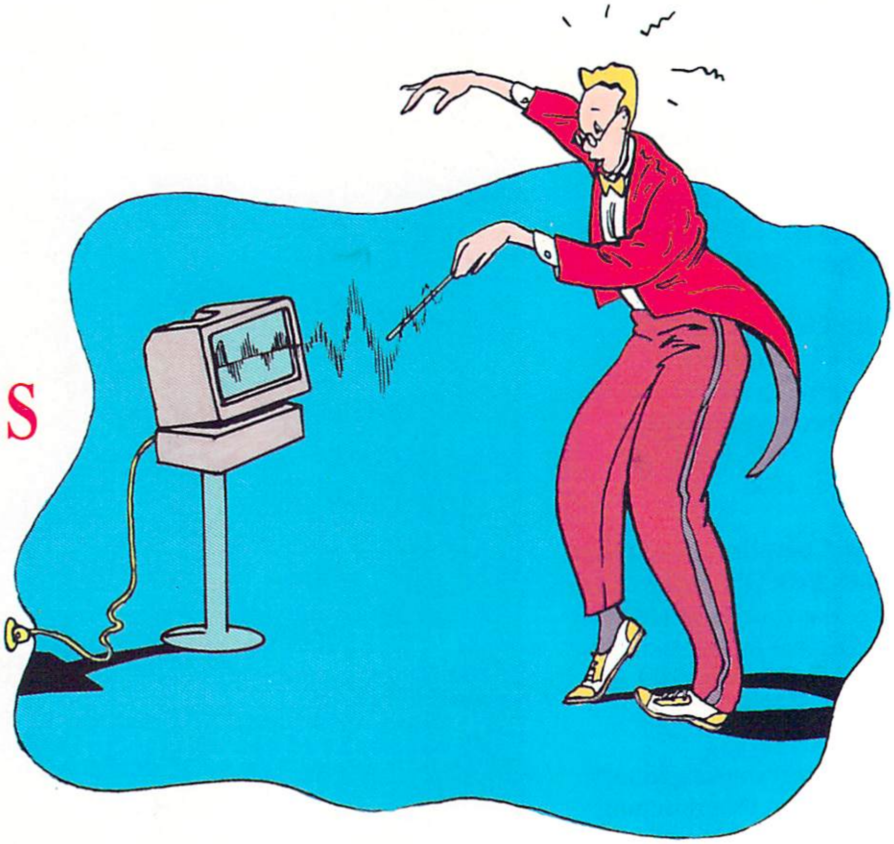
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Know What You Hear

To understand the numbers, you will need some background on sampling with the Amiga. The Amiga has four digital audio channels, or digital-to-analog converters (DACs), which are eight-bit devices residing on the Paula chip. Their maximum playback rate is the same as Paula's Direct Memory Access (DMA) rate: 28,867 samples per second (sps). Considering that some professional dedicated samplers offer 16-bit resolution and 44,100 sps, the Amiga's sound quality is pretty good.

For a higher sampling rate, programmers can send sampling data directly from the 68000 processor, bypassing Paula's DMA. AudioMaster II (Aegis), a sample-editing program, employs this scheme with impressive results, but with one serious limitation: While playing these Hi-Fi samples, the Amiga can do nothing else—no sequencing, no MIDI, no graphics. The mode's only real application is manually triggering a high-quality sample into another recording medium.

Practically speaking, with the exception of AudioMaster II in Hi-Fi mode, no sampling software on the market, no matter what its manual or specs may claim, is capable of playing back samples at rates higher than the built-in DMA maximum of 28K. In reality, when a software manufacturer claims a play- ►

By Dean Friedman

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back rate of 35K or more, the program is shortening the sample and increasing the sample's audio frequency, or pitch.

Determining actual sampling rates gets even more confusing when you consider sampling hardware. The Future Sound 500 digitizer claims a mono sampling rate of 42,118 sps. While this sounds impressive, even Future Sound's own sampling software cannot play back those samples at that high a rate. In Hi-Fi mode AudioMaster II can, but only in mono. All of the digitizers on the market use only a single sampling chip, for both mono and stereo. While your hardware may be able to sample a mono signal at the maximum rate of 28K, when it samples in stereo, the sampling rate is automatically cut in half. The individual left and right portions of the stereo sample have sampling rates of no more than 14K apiece. This kind of information is conveniently omitted from most manuals, but is crucial when selecting a sampling package.

Yet another variable in the mix is the software that runs the digitizer and lets you edit the samples it creates. Most manufacturers sell all-in-one (hardware and software) packages, so make sure to check for two important software features: saving and looping. Amiga samples are stored in Form 8SVX, part of the IFF (Interchange File Format) standard, as one-shot samples or instruments. A one-shot sample is generally a sound effect or segment of spoken dialogue whose pitch will remain constant, while an instrument is a sample or group of up to five samples whose pitch or pitches can be transposed over a range of one octave per sample. Most sample-editing software supports one, three, or five octaves.

Looping is a means of extending the length of a sample by continually repeating a short portion of it; the loop is know as the sustain portion of a sound. Selecting the ideal section of a sample to loop is tricky. How easily looping is accomplished, and how an editing program allows you to save loops while you are saving an instrument, are important measures of a program's usefulness.

In the best of all possible worlds, every piece of sampling hardware ought to work with every other piece of sampling software, allowing you to combine the unique features of the best components. With every combination of hardware and software, I sampled sounds in both mono and stereo from microphones, synthesizers, a cassette player, and a CD player. (See the accompanying compatibility chart.) While the Amiga sampling world is not perfect, I discovered it does offer the raw material for some powerful combinations.

AudioMaster II

If all you need is sample-editing software, AudioMaster II (Aegis, $59.95) is the best. In Mono mode, it works with every piece of hardware except Pro-Sound Designer. For stereo mode, only Perfect Sound is compatible, and it still suffers from cross talk. Hi-Fi mode aside, even in normal mode, AudioMaster creates standard IFF samples as well, if not better, than every other software package.

The waveform-editing screen is fast, direct, and intuitive. Click and drag with the mouse to highlight a segment of your sample. You can then edit it using the Cut, Paste, Insert, Replace, Copy, Mix, and Zero commands, as well as effects such as Echo and Digital Delay. The Real-Time Echo mode adds an echo to live input sent to the digitizer.

AudioMaster II has powerful looping tools, including the Auto Zero and Auto Loop commands, that help you locate the most appropriate start and end points for your loop. It will save an instrument to up to five octaves, and Hi-Fi Save (different than ►

Samplers Compatibility Chart

HARDWARE (columns) / SOFTWARE (rows)

SOFTWARE	A.M.A.S.	Creative Sound SP8	Future Sound 500	Perfect Sound	Pro Sampler Studio	Pro-Sound Designer
A.M.A.S.	● ●	●	●	●	●	X
AudioMaster II	●	●	●	● ● *	●	X
Creative Sound SP8	● ●	● ●	●	●	●	X
Future Sound 500	●	●	● ● *	● ● *	●	X
Perfect Sound	● ●	●	● ●	● ● *	●	X
Pro Sampler Studio	●	●	●	●	● ●	X
Pro-Sound Designer	● ●	●	● ●	●	●	● ●
Studio Magic	● ●	●	●	●	●	X

Key: ● = mono ● ● = stereo * = cross talk X = incompatible

Hi-Fi Play) mode lets you create the samples for a five-octave instrument at higher resolutions (still under 28K) than other packages. A cumbersome loop save routine is the only drawback associated with this mode, but the results are worth the extra effort.

In addition, the program has several specialized features. Resampling enables you to change a sample's rate without changing its pitch. Tune Tone generates a constant pitch of middle C (8363 Hz) as a reference. Low Pass Filter is a software routine that removes the higher frequencies and aliasing from a sample, while Edit Freehand allows you to modify existing waveforms or draw them from scratch with the mouse.

A.M.A.S.

Hailing from the United Kingdom, A.M.A.S. (Advanced MIDI Amiga Sampler from Microdeal, $169.95) combines excellent sampling software with hardware that is the pick of the bunch. The hardware documentation quotes a sampling rate of 40K stereo and 90K mono. Although you are limited to playback ►

Samplers Features Chart

SOFTWARE—SAMPLE EDITORS

	Max. Sampling Rate	Max. Playback Rate	Auto Loop	Auto Zero	# Work Buffers	# Waveforms Displayed	# Octaves	IFF Inst. Save	Resampling	Software Filter	Freehand Wave Draw	Oscilloscope/V.V.s	Output Volume Control	Volume Scale	Volume Fade	Wave Mix	Echo	Live F/X
A.M.A.S.	28K	28K	N	N	8	2	0	Y	Y	N	2 osc.	Y	Y	Y	Y	N	N	
AudioMaster II	56K	56K	Y	Y	2	2	5	Y	Y	Y	2 osc.	Y	Y	Y	Y	Y	Y	
Creative Sound SP8	28K	28K	N	N	1	2	0	N	N	N	2 v.v.	N	Y	Y	Y	N	N	
Future Sound 500	42K	28K	N	N	4	1	3	N	N	N	1 v.v.	Y	Y	N	Y	N	N	
Perfect Sound	25K	28K	N	N	*memory dependent	1	3	N	N	N	**numbers	N	N	N	N	N	N	
Pro Sampler Studio	28K	28K	N	N	2	2	5	N	N	Y	1 osc.	Y	N	N	Y	N	N	
Pro-Sound Designer	28K	28K	N	Y	8	1	5	Y	Y	Y	2 osc.	N	Y	Y	Y	Y	N	
Studio Magic	25K	25K	N	N	19	1	5	Y	Y	N	0	N	Y	Y	Y	N	N	

HARDWARE—DIGITIZERS

	Max. Sampling Rate	Level Control	Inputs
A.M.A.S.	90K	N	2 RCA Phono, one 1/8" (3.5mm) mini plug, MIDI In/Out/Thru
Creative Sound SP8	28K	N	2 RCA Phono
Future Sound 500	42K	Y	2 RCA Phono, one 1/8" (3.5mm) mini plug
Perfect Sound	25K	Y	2 RCA Phono
Pro Sampler Studio	28K	N	Two 1/4" plugs, one 5-pin DIN
Pro-Sound Designer	28K	N	One 1/8" (3.5mm) Stereo mini plug

* memory dependent—unlimited ** number only readout

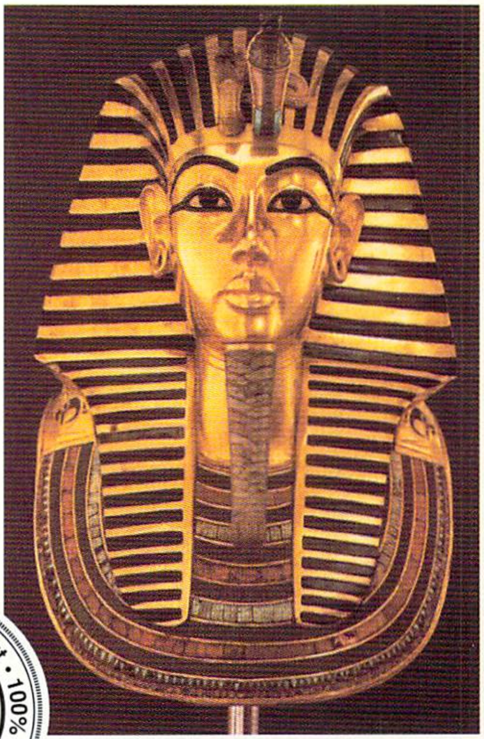
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rates of 28K, the extra headroom on the sampling chip lets the A.M.A.S. digitizer produce the cleanest samples of any device I reviewed.

The digitizer comes in a sturdy plastic case that attaches to the Amiga's parallel and serial ports (one for sampling, the other for MIDI). It has no input level control, as do Future Sound 500 and Perfect Sound, but it does have two reliable RCA phono inputs for stereo recording and a ⅛-inch (3.5mm) mini plug input for a high-impedence microphone. It also has three MIDI ports—IN/OUT/THRU—for triggering samples through its companion software.

In addition to being the cleanest sounding digitizer when using its own sampling software, the A.M.A.S. digitizer performed at the head of the class when paired up with every other software package, turning out virtually noiseless samples in mono and stereo. It delivered clean channel separation in the stereo mode with every software package except Future Sound 500 and AudioMaster II, with which it experienced some noise and cross talk problems in one channel. The A.M.A.S. hardware, with a mono sampling rate of up to 90K, together with AudioMaster II's Hi-Fi playback rate of 56K, produced a single mono sample of such clarity and with such terrific frequency response, I checked that I was not inadvertently triggering my source synth. The combination produces the best samples.

The A.M.A.S. sample-editing software offers a host of interesting and original sampling, editing, and playback routines. It has good looping tools and, in addition to the typical cut-and-paste commands, it offers features such as volume fading and scaling, software filtering (plus software control of the A500's and A2000's hardware filters), zoom, and three settings for shrink (resampling). The unique Bounce command allows you to graphically define how a sample will pan across stereo channels.

The main interface screen is attractive (in a sci-fi spaceship style), informative, and easy to use, consisting of icon-labeled buttons and familiar tape-deck controls. It has two oscilloscopes for stereo monitoring, which are instantly active upon booting up, and a stereo wavetable display. One of the buttons, when selected, opens a window revealing a frequency-spectrum analyzer calibrated in kilohertz that shows the frequency content of the sample input in real time. According to the amount of available memory, you can have up to eight working sample buffers (200K per buffer).

A separate MIDI menu offers a wide range of playback features enabling you to trigger any of the eight sample buffers (up to four at a time, of course) from the Amiga's function or alphanumeric keys, or from a MIDI keyboard. To simulate a piano keyboard, samples played from the alphanumeric keys are frequency shifted just as they would be via a MIDI keyboard.

The only drawback in this otherwise excellent program is the fact that it saves only one-shot IFF files, not three- or five-octave instrument files. That one sour note aside, this is an excellently designed piece of software, which, when combined with its terrific companion hardware, makes for a winning package.

Future Sound 500

One of the first sound digitizers on the market, Future Sound (Applied Visions) was revamped for the A500 with disappointing results. Future Sound 500 ($119.95) has two RCA phono inputs (stereo), a ⅛-inch (3.5mm) mini plug input for a low-impedence microphone, and a fader to control input level. With its own software, the digitizer made good clean samples in mono; when I tried the same sample in stereo, however, I wound up with considerable cross talk on one of the channels. Next, I hooked it up to Perfect Sound's software and got excellent stereo separation with no cross talk, but the mike input did not sample. Puzzling. To solve the problem, I tried calling the manufacturer, but talked only to its answering machine for several weeks.

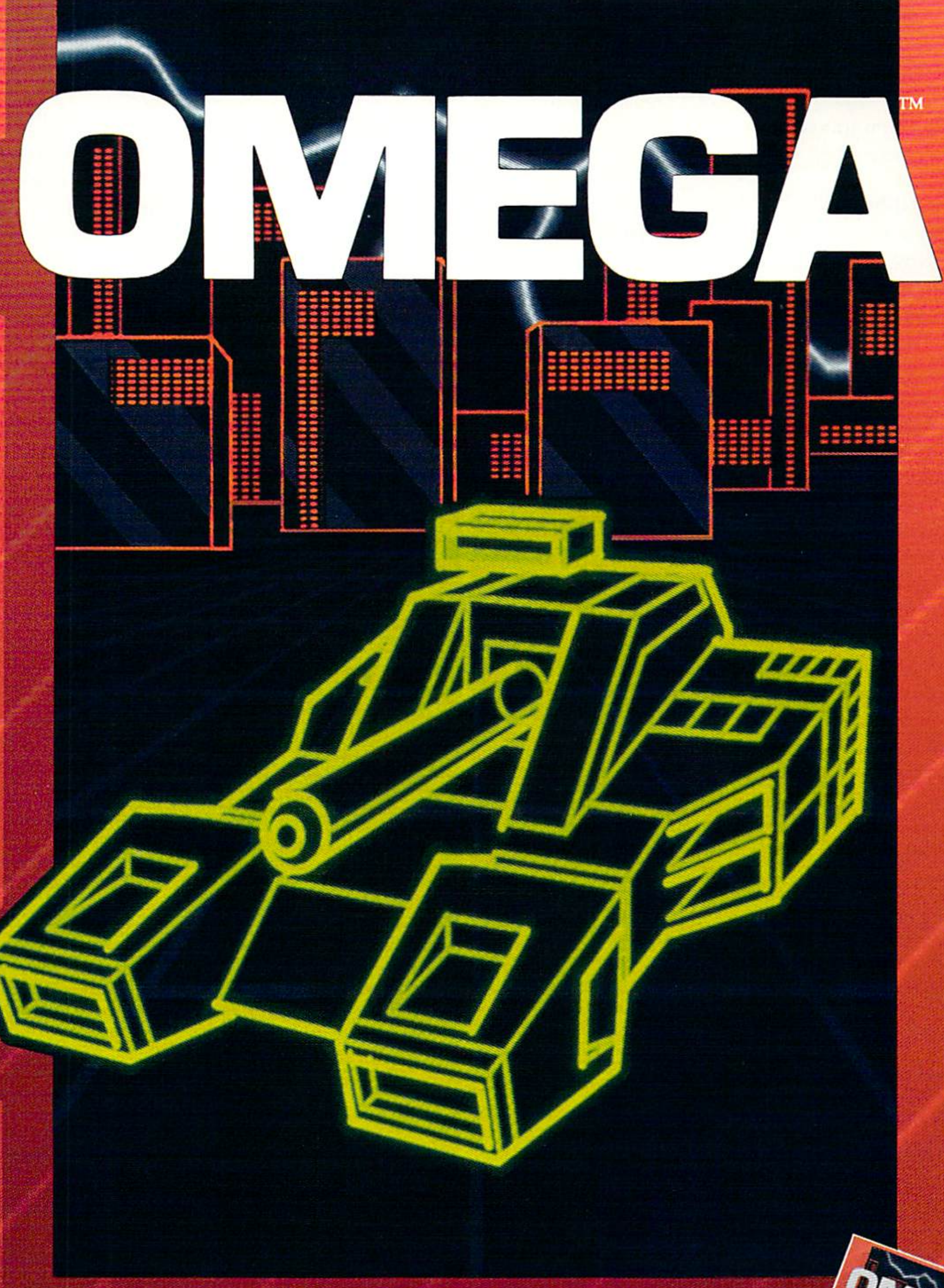
Future Sound's sample-editing software is also limited. The biggest drawback is that it only has a single waveform display, meaning you can edit the two channels of a stereo sample only one side at a time.

Perfect Sound

I found Perfect Sound (SunRize Industries, $89.95) decidedly unimpressive. In all my tests I consistently experienced a high level of noise when sampling in mono; it got worse in stereo. I also had cross talk between channels when trying to record a stereo sample; one channel would be clean while the second channel would contain a faint but annoying copy of the signal in the first channel—no channel separation. I called the manufacturer, and it acknowledged the cross-talk problem on the newer models. While the company offered to minimize the problem, it could not eliminate the noise completely on the current version. A version 3.0 is planned, however, that will update both the hardware and software.

A good idea, because the software that now comes with Perfect Sound is modest. Even when you record in stereo, it can only display one waveform at a time. It has no oscillator or VU meter and instead makes do with a confusing numeric readout for monitoring. On the plus side, the number of sample-edit buffers is limited only by available memory, allowing you to work quickly with many different samples at once.

As an alternative, you could use Studio Magic (SunRize Industries, $99.99), which was designed to work with Perfect Sound. The program has some unique and very powerful sample-editing features, but one major flaw: It crashes easily when you try to record in stereo. For working in mono mode or importing stereo IFF files, Studio Magic offers a number of useful effects, such as Comb Filter and Amplitude Modulation. It also has an original edit-buffer scheme, a modest scratch-pad sequencer, and some extremely flexible sample-playback routines that al- ►





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low you to assign multiple Key Splits to your MIDI keyboard.

Pro-Sound Designer

Pro-Sound Designer (Precision Incorporated, $159.95) should be a better package. The editing software contains some interesting features, but the hardware is poorly designed.

My first troubling observation was that two of the three inputs in the digitizer's flimsy case are simply empty holes, into which nothing can be plugged. The third input is a 1/8-inch (3.5mm) stereo mini plug. This major design flaw guarantees unnecessary noise, because you must use multiple adapters to get input from typical 1/4-inch or phono-source connectors. More serious is the fact that the unit is not compatible with any software besides its own. It does make relatively clean samples, however, when you use its companion software.

The software's main screen resembles that of the A.M.A.S. software and offers most of the same common editing commands. Unfortunately, it only displays one waveform at a time, even in stereo, and has an annoying habit of staggering the playback of its stereo samples. On the plus side, it does include a Draw Waveform Edit mode that lets you draw a section of your sample with a mouse. Its other interesting feature is an auto-play function that lets you set a threshold for your audio input that will then trigger a sample. Theoretically, you could use this feature to turn your Amiga into a sound-activated burglar alarm that growls when someone enters your house.

Creative Sound SP8

Made in Denmark, and at present available only by mail order, the SP8 (Creative Sound Systems, $100) is a well-built sampling package that yields good clean sounds. The hardware requires a 12V DC transformer and is compatible with most of the other packages in mono, but not in stereo. With its own modest software, it records clean samples in mono and stereo, but I did experience some slight pitch discrepancies in which samples would be 1/4 tone sharp or flat upon playback.

Pro Sampler Studio

The Pro Sampler Studio (Datel Computers, $119.99) has only three things in its favor: a Draw Waveform Edit mode, a neat 3-D wave display, and it is packaged with a simple four-track, scratch-pad sequencer. The companion software is the only program without an audio-filter defeat, plus it lacks volume-editing commands and resampling features. To top it off, the interface is clumsy. The hardware makes modest stereo samples with its own companion software and noisy mono samples with every other sample-editing program. I do not recommend it.

If I were about to embark on an important audio project in which I needed to create high-quality Amiga samples, I would use A.M.A.S. to assure me of the cleanest samples in stereo or mono, AudioMaster II for its powerful editing features, and, possibly, Studio Magic to make use of some of its unusual special effects. The combination is a chart topper. ■

Dean Friedman is a record producer, animator, and game designer with several hit records to his credit. He composes and produces sound tracks for TV and film and is currently developing interactive game environments on the Amiga for the Nickelodeon cable network. Write to him at PO Box 878, Ansonia Station, New York, NY 10023.

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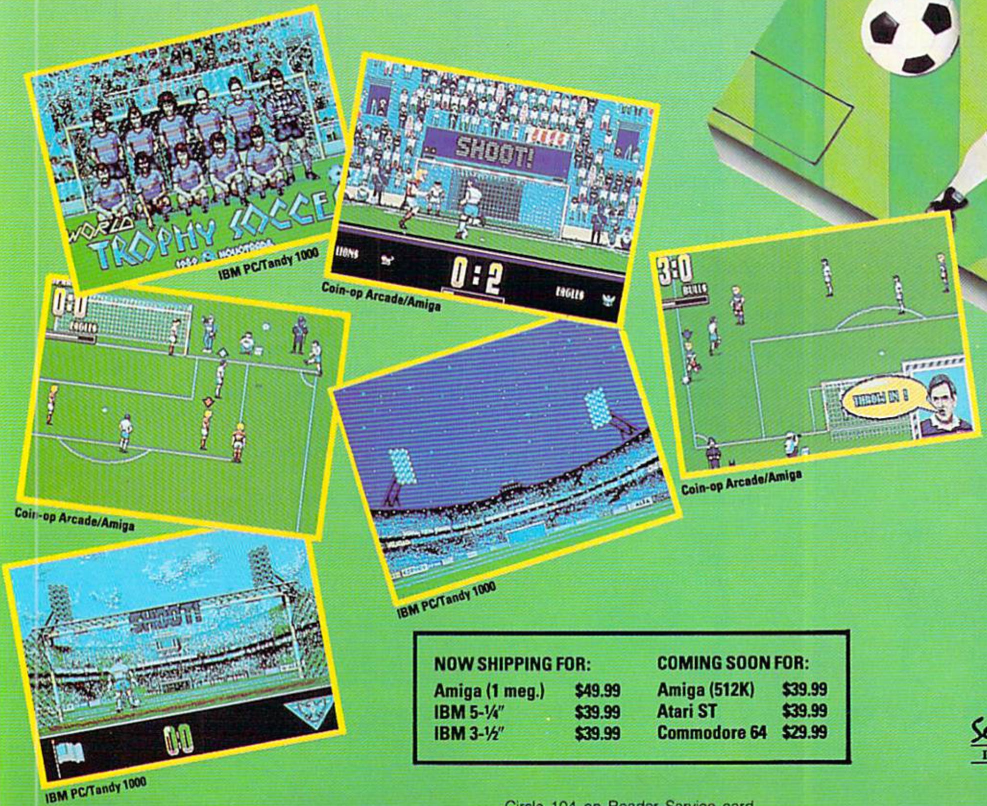
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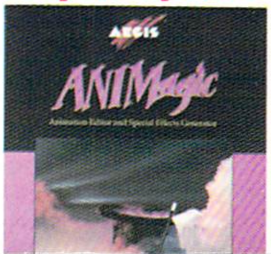
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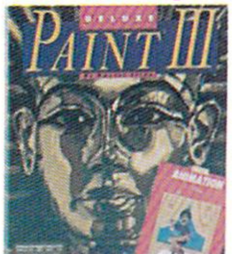
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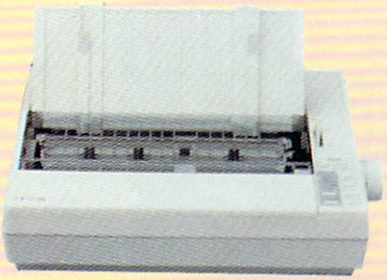
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8

A continuing series of tips, techniques, and tricks for creating more imaginative Amiga graphics.

By Joel Hagen

The "Art" of Printing

TOO OFTEN, AMIGA artists seeking gallery-quality prints of their work think of printers only as devices that make hard copy of what is on the screen. Getting the best results from a printer requires thinking of ink as a medium, and the printer as an artistic tool over which you have considerable control.

Any artistic tool or medium has certain characteristics, certain limitations. Watercolors do not look like charcoal drawings, nor do Amiga graphics look like oil paintings. Ink-jet printer output does not look like what you see on your monitor, nor does nine-pin dot-matrix output look like that of ink jet. Yet, all these media, properly handled, can yield gallery-quality results.

I teach a computer graphics class in which we use an HP Paint Jet printer for color output. The following techniques will refer to that printer, but similar thinking could be applied to any machine. I am fascinated with the look of the ink on the page from ink-jet printers. It has a velvet, saturated intensity that can look almost like dyed fabric. To get this quality, use the clay-coat paper intended for the printer. You will never get good results from standard bond. The trick to that amazing saturation of color is to make a double pass through the printer.

Double-Pass Printing Techniques

On the Paint Jet, position the seam of the paper as you normally would relative to the print head. The tractor-feed margin will say something like: PRINT THIS SIDE. Line up one particular character with the edge of the plastic tear strip or make a pencil line as a registration mark. Now hit the Top-of-Form button. On the Amiga, proceed with the Print operation. When finished, roll back the sheet to the registration mark, and hit the Top-of-Form button again. This will reregister the print head to the starting position on the same image. (Note: Check your printer manual for instructions on rolling back the paper to avoid damage.) As you run a second print pass, the color will fill in, leaving no print head lines.

Some screen images are not well suited to double-pass printing. All colors tend to darken during the second pass, and a dark image may virtually disappear. Black comes out as a rich, flat black, but any dark color will appear nearly black in the printout. Colors of high saturation work very well and will intensify, although they may change from the screen color. Blues, violets, and purples are almost iridescent. Colors toward the light end of the value scale, especially if they contain blue, work poorly. The printer uses dots of color spaced far apart to approximate the light shade. Those dots are still quite dark and form a distracting pattern. Often, light blue is so close to white, that light yellow will work better. On the monitor, light blue and light yellow may both look like shades of off-white, but on the printout the blue will be much darker than the yellow. Think ahead to the printer. Experiment and make notes.

A dark painting can be lightened using PIXmate's Bias tool. Although it may look overexposed and washed out on the screen, it will saturate and darken during the second or even third pass on the printer. For another interesting result, offset the image slightly out of register for the second pass. This can soften it, and even antialias curved and diagonal lines. Try "double exposures," printing one image on top of another. This works very well for nonrepresentational images or for layering abstract color onto a portrait at the printing stage.

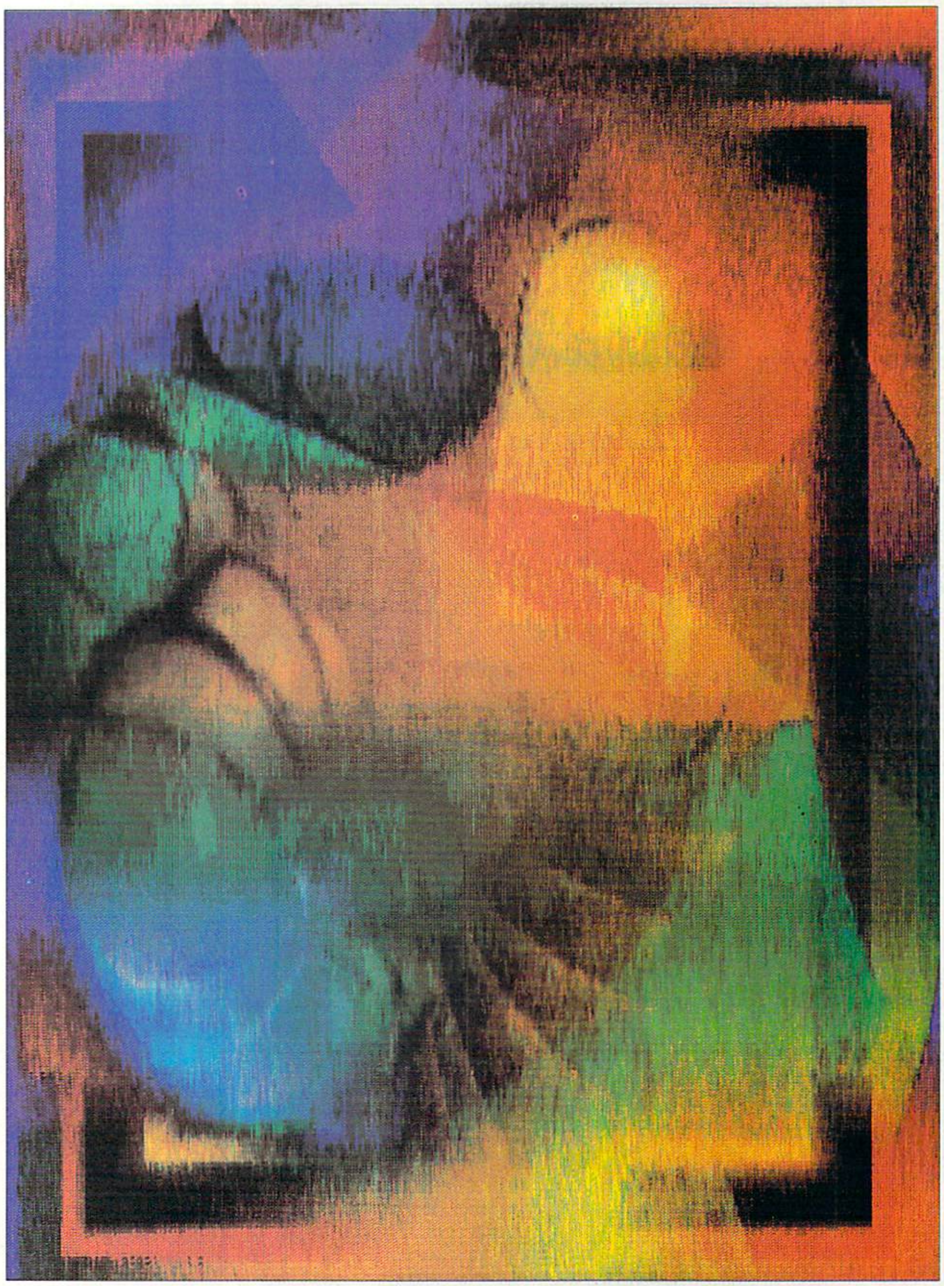
Think of your printer not just as a production tool,

but as another resource in the artistic process.

Always *run* your software to take advantage of the Amiga's multitasking, allowing you to get back and forth to Preferences while doing your printouts. Select Graphic 2 to bring up the control screen. Ordered dithering with Smoothing off is the default. F-S dithering randomizes the dither pattern in creative ways and is sometimes more visually interesting. A favorite trick of mine is to make one pass ordered, and one pass F-S. Turning Smoothing on tends to reduce the blocky nature of the pixels in the printout. This can be effective with certain fonts, although I have not found it as useful as I had hoped.

If your dot-matrix printer is not giving you dense enough blacks, try the double-pass technique. You will be surprised how effective the tractor feed is at re-registering an image under the print head. With a little tape, you can create a loop of three sheets of paper. Do the first pass, and use form feed to bring the sheet back around into registration. If your printer accepts different colors of ribbon, you can build an image in stages. This is a great technique for technical drawings. Plan your drawing ahead of time for the printer so that each layer is a separate IFF image that loads to the proper screen position. Do the first pass in blue, for example, double printing for good density. Then pull in a new part of the image from disk and put in a brown ribbon for those passes. Perhaps add text in black after another ribbon change. The results can look like they came from a printer costing ten times what you spent for that little nine-pin. ■

Joel Hagen's credits include work in art, astronomy, science fiction, and software development. Write to him at 10512 Sawyer, Oakdale, CA 95361. Please include a stamped, self-addressed envelope.

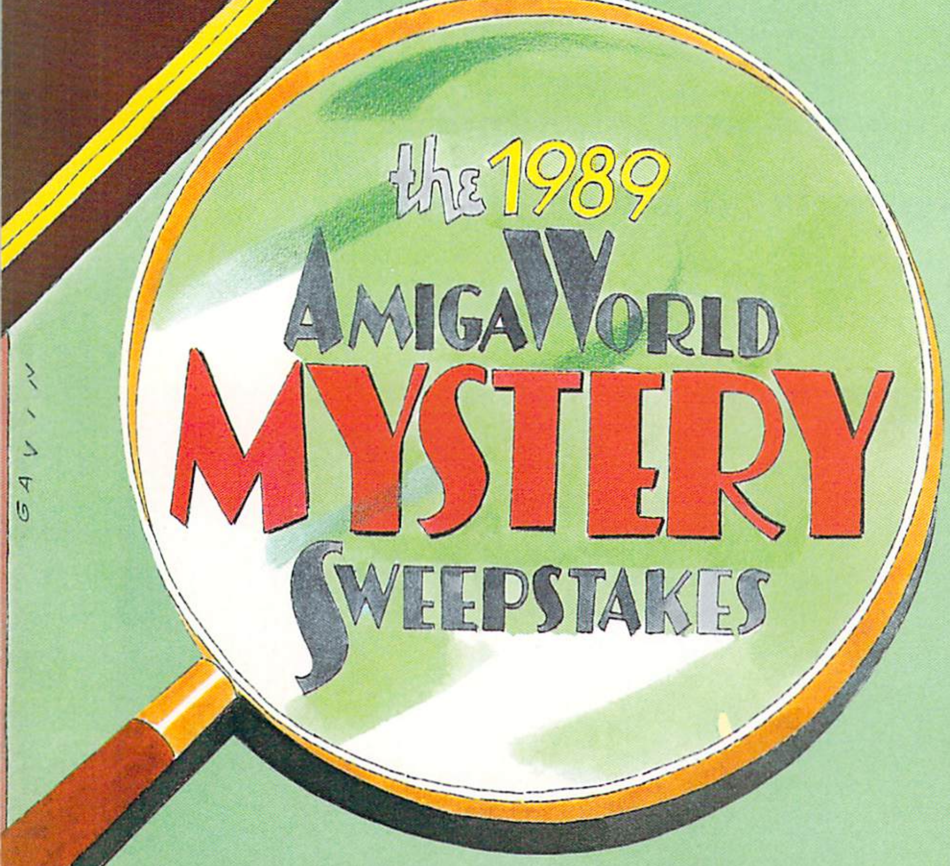


The printout of "Abstract" above is the result of double-pass printing—reregistered with ordered dithering applied—on an HP Paint Jet printer.

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MURDER AT SARATOGA

The Solution



WHAT? (Victim)	Syl Vestry
WHERE?	Everett Whitley's Stable
HOW? (Weapon)	Pitchfork
WHO? (Murderer)	Davis Longfellow
WHEN?	1 am (Sunday)
WHY?	A number of motives—greed/ambition for the development scheme, love of Clara, revenge or malice towards Marjorie, and so forth—are acceptable. See details of the solution below.

Of the many entries we received, only three were entirely correct (and thus eligible for the three top prizes). Those entries (and there were quite a few) specifying Vestry as victim and Buford Langtry as murderer (the next closest solution) became eligible for the remaining Finalist prizes. Consolation winners (to be announced next month) will be drawn from the remainder of these and other entries with the most correct answers.

Part I was a bit of a "morning workout," as they say in horse racing, for our contestants to guess by process of elimination the name of the victim from the list of 10 possibilities. Clue #1 (genetic code) eliminated the three women—Miranda, Cherry, and Marjorie. The numerical range was 1–26 (the alphabet) and the numbers eliminated, respectively, were: 1–14 (wicket pass-throughs), 26 (Teddy Roosevelt), 21–17 (21 Club and "Seventeen" magazine), 16 and 15 (square root of 256 and number below it), 22 (22nd Amendment), 23 (Benjamin Harrison's presidency between Cleveland's two nonconsecutive terms). This left 24 and 25 (translated as "x" and "y" and thus denoting, genetically, a male; eliminate females).

Clue #2 (height in inches) was a mathematical exercise in AmigaDOS Error Codes ([205+202+218]−[224+223+104]=74). The victim was 6′2″ tall, thus eliminating the two jockeys, Russell and Walker.



Clue #3, based on Amiga Basic Error Code #7 (out of memory), eliminated the two seven-lettered possibilities, Whitley and Mikaros.

Clue #4 indicated Vestry (the odd person out among Stone and Stone).

Unlike the numerical exercises of Part I, Part II demanded powers of deductive reasoning. We realize that interpretations here were, by necessity, somewhat subjective. Be that as it may, here is how our tale unfolded.

Harry Stone planned to drug Rambling Boy, making it appear that Everett Whitley drugged his own horse so that Everett could bet against him. Although he has a fairly generous trust fund, the ne'er-do-well Harry is afraid his high-principled father will carry through with his recent threat to disinherit him, and then make Whitley his heir. Jeremiah has always treated the hard-working Whitley like a son, especially since the young man's father was killed in a training accident for which Jeremiah feels at least partly responsible.

Miranda Langtry despises her sardonic, middle-aged husband, whom she married at an early age, mistakenly thinking he was the epitome of wealthy Southern gentility. She is infatuated with the handsome and ruthless Harry, with whom she has been having an affair over the past year. As an accomplished actress, she aids Harry by impersonating Cherry Flowers. (Both, as we know, are tall, shapely blondes, and some gaudy makeup, excessive lipstick, a tight-fitting skirt, and the proper wrong-side-of-the-tracks accent take care of the rest.)

The false Cherry makes sure the crowd at Madigan's won't forget her entrance or her intimate tête-à-tête with the unsuspecting Everett Whitley. The next morning, before the race, she reappears at Madigan's (at 9:35 am) and, with several witnesses in earshot, makes a $10,000 bet with Jimmy The Satchel using Harry's money—*against* Rambling Boy. (Remember, the real Cherry Flowers was seen at 9:20 am with Big Joey D. at the Casino—a full 35 minutes' drive from Madigan's.) All the evidence for the fix is in place.

Harry Stone, meanwhile, has invested another $10,000 to persuade the real Cherry Flowers to disappear the morning after the race.

Unfortunately for Harry and Miranda, they did not realize that on the morning before the race when they were discussing their plans in the Langtrys' hotel suite, Buford Langtry was not at the racetrack as had been supposed. Having seen Harry drive up to the hotel, Buford returned to the suite, where Miranda was still asleep, and hid outside on the terrace to listen to what young Stone and Miranda were up to. Miranda, awakened by her lover, let Harry into the room, where the two went over the final details of their plot.

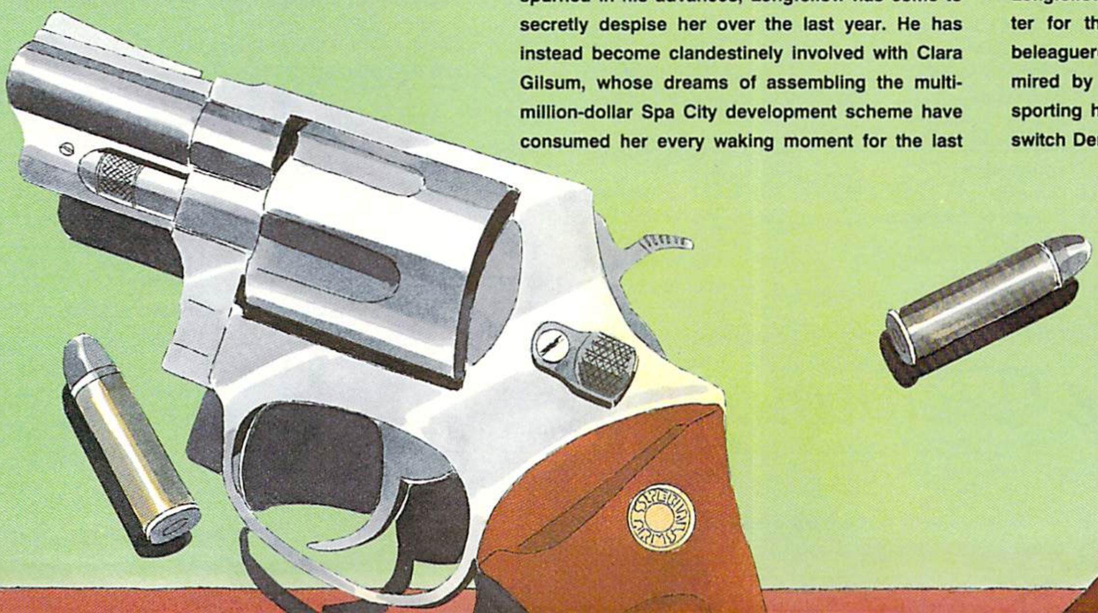
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Sixth Prize Jim McKenzie New Port Richey, FL	*Ninth Prize* Olaf Haakonstad Ann Arbor, MI	*Twelfth Prize* Kay Johnson Harker Heights, TX

Langtry, long aware of his wife's affair and not particularly bothered by it, received great amusement from the lovers' plan—because he saw a way to profit from it. Not only would he garner immense satisfaction from seeing his old rival Jeremiah Stone humbled in the Travers Stakes, but also, as the trainer of Dervish—clearly the second best horse in the race—he would probably win the 10% trainer's share of the winning owner's purse of $600,000—a cool $60,000 he hadn't been counting on at all. Not only that, but he might wager, say, $5000 at odds of 3 or 4 to 1—generous if one knows the odds-on favorite won't be in the hunt.



Langtry pays a visit to Madigan's later that morning to make a bet with Jimmy The Satchel. Davis Longfellow, who knows Langtry quite well, engages him in conversation and drinks before Langtry has a chance to place his bet. Langtry, feeling expansive from his cocktails, lets drop a hint that he has inside information about Rambling Boy. Within the next 15 minutes, Longfellow discovers all and concocts an idea that will become the plan for which he has been searching these many months to realize his complex ambitions.

Having long courted Marjorie Mackenzie after her husband's death, and been gently but firmly spurned in his advances, Longfellow has come to secretly despise her over the last year. He has instead become clandestinely involved with Clara Gilsum, whose dreams of assembling the multi-million-dollar Spa City development scheme have consumed her every waking moment for the last two years and, more recently, Longfellow's as well. Marjorie—with her Three Legs Farm situated right in the middle of the proposed development—is, of course, the stumbling block. She is too stubborn to sell, but too much in debt to hold out indefinitely—and Longfellow must continue to appear to be her friend and staunch supporter.

Longfellow's proposal to Langtry—sketched in brilliant, lightning-quick strokes—is this: Suppose Langtry were to withdraw Dervish this morning from the race, saying that there is simply no way Rambling Boy can be beaten—even by the next best horse in the race. By doing so—and here Longfellow summons up all the nerve he can muster for this lie—Langtry could help the much-beleaguered Marjorie Mackenzie, a woman admired by all for her tenacious pride and good sporting humor in the face of ruin. The trick is to switch Dervish for Hope's Last Chance just before

the race. Marjorie's horse and Langtry's Dervish are both dark bays of nearly identical conformation and markings.

Dervish's octogenarian owner gives Langtry free reign over decisions about his horses and, besides, he is not even in Saratoga for the race. And Longfellow will see to it that the unsuspecting Marjorie herself is occupied in the crucial few last moments when Langtry switches the horses on the way to the paddock before the race.

Marjorie's trainer, Syl Vestry, is basically an honest chap, but he is completely devoted to her and he will never refuse Longfellow when he explains that this will mean the entire difference between saving or losing the farm. The jockey will be well paid by Vestry to ask no questions. There will be so much of an uproar when Rambling Boy trails in a dull last that in the confusion it will be a breeze to switch the horses back to their original barns after the race.

Langtry, of course, will be giving up his winning trainer's share of $60,000, but as a betting man he can make a fortune wagering on an apparent 100 to 1 longshot who is almost certain to win. A mere $5000 could net him $500,000—tax free! And, besides, with Marjorie collecting the $600,000 paid to the winning owner, she will be able to keep her farm and dash the Spa City development plan in which Langtry's archrival, Jeremiah Stone, is the major investor. The plan appeals to the gambler and old reprobate in Langtry, and the deal is set.

Longfellow, as we know, plans to play a somewhat different hand with the cards he is dealing. The switch before the race works to perfection. Later, however, after the midnight climax of the costume ball, he goes to the racetrack. After making sure Everett Whitley has left his stable after his 12 o'clock check on the horses, he waits next door at Syl Vestry's stable. Syl, as stated, always goes back to his barn at 1 am to perform a similar check.

When Vestry arrives, Longfellow grabs him from behind, knocks him unconscious, and drags him next door to Everett Whitley's barn. He then takes Whitley's pitchfork and stabs the helpless victim repeatedly. Closing the barn door, he takes off his gloves, gets in his car, and drives away. The perfect frame job is now in place.

The next morning his plan will begin moving to its final, inevitable conclusion. The post-race lab tests conducted on Rambling Boy—a standard procedure for all losing favorites in any race—will return positive for the drug used to make him lethargic. The stories about Whitley, the false Cherry Flowers, and the bet will implicate Whitley in a fix. The body of winning trainer Syl Vestry found in Whitley's own barn and stabbed with Whitley's pitchfork, and the fact that Whitley was known to have been in the barn less than an hour before the murder, will suggest an even more widespread fix and a falling-out between the thieves—Vestry and Whitley, victim and murderer—fighting over their share of the spoils.

More importantly, the murder will lead to a certain investigation of the entire race and an equally certain uncovering of the Dervish-Hope's Last Chance switch—carried out supposedly by Whitley and Vestry without Langtry's knowledge. The purse money will be taken from Marjorie Mackenzie, she will be ruined, and Three Legs Farm will fall to Clara Gilsum's development scheme. And the only living person who will know of Longfellow's involvement, Buford Langtry, will never tell because if anyone finds out he made a half-million dollars on the fix, he will be implicated in the crime. Besides, Langtry is hardly a man of conscience.

Others with malicious intentions—Harry Stone and Miranda Langtry—will also benefit, albeit without direct involvement in the crime. And those few good souls in this story—Everett Whitley, Marjorie Mackenzie, and some of the hearty Runyonesque denizens of Madigan's Bar Shoe Inn—will all suffer, unless Andy Axfeld and you, Dear Readers, have been sharp enough to unravel this tale of deceit and treachery and to provide the greedy villains with their own just deserts. ■

—Daniel Sullivan

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RAM Returns: Making Memory Pay Off

Invest some of your Amiga's main memory and reap handy dividends in faster, more efficient performance.

By Bill Catchings and Mark L. Van Name

ONE OF THE simplest ways to make your Amiga work faster and more efficiently is through a little creative tinkering with its one megabyte (or more, perhaps) of main memory.

If you are not an A2000 owner, we are assuming you have upgraded to at least one meg. With RAM chip prices finally starting to spiral downward again, there is little reason for anyone to be confined to 512K. The A501 512K Memory Expansion Module for the Amiga 500 is under $200. If you have an Amiga 1000, you can expect to pay a bit more, but either way it is a great investment.

Flog Those Floppies!

One of the first things you should do with that 512K or more of extra memory is to speed up those annoyingly slow floppy-disk drives. AmigaDOS associates with each floppy drive or hard-disk partition a small pool of memory called a buffer area. AmigaDOS stores in that area blocks of information that you recently used. When you need data from a disk, AmigaDOS checks first to see if that data is in the buffer area. If so, AmigaDOS bypasses the disk and retrieves your data much faster. Try running INFO twice in a row; the second time you usually won't have to read the disks.

You can speed up your disk reads by using ADDBUFFERS to increase the size of the buffer. ADDBUFFERS' arguments are simply the name of a drive and the number of buffers you want to add. You must use the ADDBUFFERS command for each drive, because each one has its own buffer area. Place these commands in the S/STARTUP-SEQUENCE file on the working copy of your Workbench disk, and the whole process becomes automatic.

It will not cost you much for these extra buffers. For example, the command

```
ADDBUFFERS DF0: 30
```

sets aside 30 more buffers for your internal floppy drive. Each buffer consumes only 512 bytes, so this statement costs you only 15K.

Even if you have several megabytes of memory, however, don't add more than 30 buffers per device. Once you get above 30 extra buffers, the inefficiencies of the AmigaDOS buffer-management software begin to cancel the benefits.

ADDBUFFERS has one other problem: It does not always help with disks that use the old, pre-1.3 file system—which unfortunately today includes all floppy drives. (You can, and should, run your hard disks with the new FastFileSystem.) If you want to ensure that you are speeding up all of your disk accesses, buy FACC II ($34.95), a utility from ASDG that we discussed previously (see "info.phile," Sept. '89, p. 56). It is a fairly inexpensive and superior alternative to ADDBUFFERS.

Some Extras for the CLI Set

ADDBUFFERS is an asset whether you use the Workbench or the Shell. If you are a Shell user, however, there are several other ways that extra memory can help you out.

For one thing, with the ALIAS command you can tailor your command environment at the cost of only a few memory bytes. ALIAS allows you to create synonyms for CLI commands; first, list the name you want to use, then the command name itself. For example:

```
ALIAS LS LIST
ALIAS DEL DELETE
```

If you place your ALIAS commands in the file S/SHELL-STARTUP, AmigaDOS will run them automatically every time you start a new Shell.

Another, more memory-expensive way to improve Shell command handling is to use the RESIDENT command to copy commands into memory so that the Shell ►

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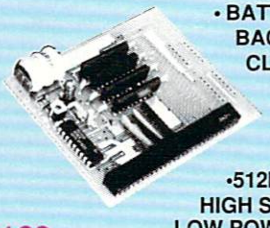
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does not have to read them from a disk. Because you can make individual commands resident, this is a nice alternative to the old technique of copying all of your commands into a C directory in the RAM: disk.

There is one small catch: You can only make a command resident if it is pure. A program is pure if it is reentrant (several processes can run it simultaneously) and re-executable (you can run it repeatedly). To find out if a command is pure, LIST your C directory and check the command's attributes; if you see the letter p, the command is pure.

To make commands resident automatically when you boot your Amiga, follow the standard AmigaDOS example and place your RESIDENT statements in the file S/STARTUPII, which STARTUP-SEQUENCE executes. The amount of memory that resident commands consume depends on the size of those commands; you can calculate the total by adding their sizes.

YOU GET WHAT YOU PAY FOR

So far we have discussed techniques that yield minor improvements for small expenditures of memory (in the 100K–200K range). For even more speed and efficiency, consider investing 396K or more on a bootable, recoverable-RAM disk.

You can boot from the new 1.3 recoverable-RAM disk, RAD:, if you have an A1000 with a 1.3 Kickstart disk, or an A500, A2000, or A2500 with the 1.3 Kickstart ROM. Even if your Amiga cannot reboot from RAD:, you can still use RAD: to relieve you from having to keep Workbench in one of your disk drives.

The 1.3 documentation suggests that you need two megabytes or more of memory to make a rebootable RAD:. While it is ideal to have at least two megs (because you can then simply make RAD: a full 880K and copy your entire Workbench disk to it), it is possible to get by with less than half that amount.

First, you must create RAD:. Unlike the older RAM:, RAD: has a fixed size that you control with an entry in DEVS/MOUNTLIST, much as you would set the size of any disk. The cylinders on RAD: are the same 11K size as those on a floppy. The default MOUNTLIST entry for RAD: has 22 cylinders. We will need to make it a little larger. Use an ASCII editor, such as ED or MEMACS, to set the HighCyl field of that entry to 35. This gives RAD: 36 cylinders, or 396K.

Now you must fill RAD: with the right files and directories. Listing 1 contains a batch file, MAKE_RAD, that will fill this small RAD: and transfer control of your Amiga to it. Type these commands into a batch file MAKE_RAD in your S directory, and then insert the line

EXECUTE MAKE_RAD

in your S/STARTUP-SEQUENCE file between the FASTMEMFIRST and BINDDRIVERS statements.

That's it; you're ready to go. Reboot your Amiga and you will be able to run off RAD:. (Be sure to remove your Workbench disk from the internal drive first; your Amiga will always try to boot first from any disk there.)

There are, of course, some limitations. For one thing, you can use easily only the commands that we copied into RAD:C. To use any other command, you must insert your Workbench disk into a drive and use the full pathname of that command (for example, "Workbench 1.3:ED"). Alternatively, you could make RAD: larger and copy that command into it, or remove one of our choices and replace it with your own.

Another minor problem with our RAD: setup is that it leaves no room in its PREFS and UTILITIES directories for the programs that usually reside there, because those directories are needed to enable a PATH statement in S/STARTUP-SEQUENCE to work. Fortunately, you normally have little use for these and are unlikely to miss them.

Also, if you have made resident any commands that we copy into RAD:, remove those RESIDENT statements; there is no need to put two copies of any command into memory.

Our batch file may seem a bit too much like magic, but it does work. The comments should help you to understand it. Next time, we will take a closer look at batch files; that information should help answer any remaining questions about MAKE_RAD.

Bill Catchings and Mark L. Van Name are contributing editors to AmigaWorld. *Write to them at 10024 Sycamore Rd., Durham, NC 27703.*

Listing 1. MAKE_RAD

```
; See if RAD: is a known device.  If not, Mount it.
FAILAT 30
ASSIGN > NIL: RAD: EXISTS
IF WARN

   ECHO "Mounting the recoverable RAM disk"
   MOUNT RAD:

; If you have not already created a C directory
; in RAD:, make one now.
   IF NOT EXISTS RAD:C

      MAKEDIR RAD:C

; Copy into this directory the commands you need
; for the standard S/STARTUP-SEQUENCE.
      COPY C:COPY RAD:C
      ASSIGN C: RAD:C
      COPY DF0:C/ADDBUFFERS C:
      COPY DF0:C/ASSIGN C:
      COPY DF0:C/BINDDRIVERS C:
      COPY DF0:C/BREAK C:
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      COPY DF0:C/RESIDENT C:
      COPY DF0:C/RUN C:
      COPY DF0:C/SETCLOCK C:
      COPY DF0:C/SETPATCH C:
      COPY DF0:C/WAIT C:

; Now copy into it some other commands
; that you frequently use.
      COPY DF0:C/DELETE C: ►
```

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```
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      COPY DF0:C/INFO C:
      COPY DF0:C/INSTALL C:
      COPY DF0:C/LIST C:
      COPY DF0:C/MAKEDIR C:
      COPY DF0:C/TYPE C:

; Create and fill the S, DEVS, L, LIBS, SYSTEM,
; and EXPANSION directories in RAD:.
; Copy only a few crucial files from S.
      MAKEDIR RAD:S
      COPY DF0:S/STARTUP-SEQUENCE RAD:S
      COPY DF0:S/STARTUPII RAD:S
      COPY DF0:S/SHELL-STARTUP RAD:S
      COPY DF0:S/MAKE_RAD RAD:S

; Copy all of the files from DEVS, L,
; LIBS, and EXPANSION.
      MAKEDIR RAD:DEVS
      COPY DF0:DEVS RAD:DEVS QUIET

      MAKEDIR RAD:DEVS/KEYMAPS
      COPY DF0:DEVS/KEYMAPS RAD:DEVS/KEYMAPS QUIET

      MAKEDIR RAD:L
      COPY DF0:L RAD:L QUIET

      MAKEDIR RAD:LIBS
      COPY DF0:LIBS RAD:LIBS QUIET

      MAKEDIR RAD:EXPANSION
      COPY DF0:EXPANSION RAD:EXPANSION QUIET

; You can get by with only one font, Topaz.
      MAKEDIR RAD:FONTS
      COPY DF0:FONTS/TOPAZ.FONT RAD:FONTS

      MAKEDIR RAD:FONTS/TOPAZ
      COPY DF0:FONTS/TOPAZ RAD:FONTS/TOPAZ QUIET

; Take from system only the files that you
; need for S/STARTUP-SEQUENCE.
      MAKEDIR RAD:SYSTEM
      COPY DF0:SYSTEM/SETMAP#? RAD:SYSTEM QUIET
      COPY DF0:SYSTEM/FASTMEMFIRST#? RAD:SYSTEM QUIET
      COPY DF0:SYSTEM/CLI#? RAD:SYSTEM QUIET

; Create the standard empty working directories
; in RAD:.
      MAKEDIR RAD:T
      MAKEDIR RAD:EMPTY
      MAKEDIR RAD:TRASHCAN

; Create the placeholder PREFS and UTILITIES
; directories.
      MAKEDIR RAD:PREFS
      MAKEDIR RAD:UTILITIES

; Copy the icons for the new directories
; and one for RAD:.
      COPY DF0:SYSTEM.INFO RAD:
      COPY DF0:TRASHCAN.INFO RAD:
      COPY DF0:DISK.INFO RAD:
      COPY DF0:EMPTY.INFO RAD:

   ENDIF
ENDIF

; Transfer control to RAD: by assigning key logical
; devices to the appropriate directories in RAD:.
ASSIGN S: RAD:S
ASSIGN L: RAD:L
ASSIGN LIBS: RAD:LIBS
ASSIGN DEVS: RAD:DEVS
ASSIGN FONTS: RAD:FONTS
ASSIGN SYS: RAD:
FAILAT 10 ■
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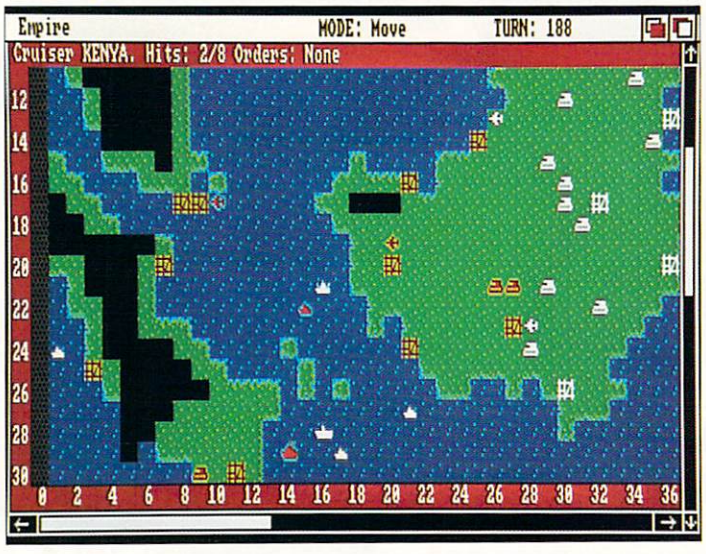
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General Hunter takes to the battlefield.

By B.G. Hunter

MARCHING DOWN THE fields of last month's football games put me in a conquering mood. I wanted more—to take over a world or an entire galaxy. So, I played a trio of games (Reach for the Stars, Stellar Conflict, and Empire) that cater to the Caesar in all of us.

In all three, you, the commander-in-chief, start out in control of a single location in a largely mysterious world or universe. With the production capabilities of that location, you produce the things you need to explore and conquer the rest of the world or universe. You're not alone, of course; up to three other would-be empire-builders are also producing, exploring, and expanding. The computer will fill these roles, or you can play one or more human opponents.



B.G.'s white armies advance in Empire.

Play moves through three main phases. (Be warned: these games can take a lot of time. Fortunately, you can save them and resume at the same spot later.) In the exploration phase, you produce units that you use to explore the nearby area. Your goal is to find additional planets or cities that you can conquer and use to increase your production. In the annexation phase, you subjugate these underdeveloped neutral locations. Once you've captured a location, you make it start producing more armies, ships, or defenses for your cause. The final phase, conquest, begins when you encounter your enemies. You try to conquer their locations, while at the same time defending your own. You must manage massive production and deployment problems as you extend your empire over the playing field.

Reach for the Stars

In Reach for the Stars (Strategic Studies Group Pty. Ltd., $45), your playing field is an entire galaxy. You begin with a single planet. You explore the other stars in the galaxy with the scout ships you produce. As ►



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each scout encounters one of the 54 stars, it tells you the number (up to three) and types of planets around that star. You use that information to choose nearby planets to colonize. Those planets should be habitable and have large production potentials. If you're lucky, you might even have another suitable planet in your own solar system.

The number of resource units a planet can produce depends on its production capacity, population size, and physical and social environments. You invest resource units to improve planets to increase their production. Once you've brought a planet to its maximum potential, you can use it to produce warships and colonize other worlds.

Eventually, of course, you'll come into conflict with the other three interstellar commanders. You must balance your expenditures for environmental, production, and technological improvements, as well as colonization, with those for planetary defense and warship production. After all, your enemies might attack you first.

Reach for the Stars combines these factors—and many others—into a rich and complex game. It also offers good graphics and an Amiga-style user interface that make it a pleasure to play. The key to success is to maintain a low profile. Don't overextend yourself, and don't antagonize your enemies—at least, that is, until you're ready to fight to the death! Build your armada quietly and then strike suddenly in the latter stages of the game.

The game's scoring recognizes that it could take you forever to vanquish all your foes completely: You play for a set number of turns, with winning based on points for battle victories and planetary production. I logged a lot of hours with this game, but it's the only one of the three that I never won. If you want the most playing hours for your dollar, Reach for the Stars is the game for you.

STELLAR CONFLICT

Stellar Conflict (Par Software Inc., $39.95) also operates on a galactic scale, although a somewhat simpler one. Unlike Reach for the Stars, Stellar Conflict gives only one planet to each star, and the entire galaxy fits on one screen. You and the other three players each start with a base planet. While you can see all the planets, you can discover their resource development potentials only by exploring them. All revenues from your planets go back to your base planet; lose that base and you get no revenues.

Your decisions are also simpler: You have to worry only about producing ships. Of course, you must balance the number of ships you leave behind for planetary defense with the number you take on conquests. Your base planet uses the revenues from the colonies to produce all your ships. You can send those ships to other planets via any of the 19 hyperspace channels or the two superspace (twice as fast as hyperspace) channels.

To win at Stellar Conflict, you must manage your supply lines well. Ships in hyperspace are inaccessible, so planet-hop where possible. Stay mobile, so that you can protect your home planet; you can always recapture other planets later.

The game also sports a nice Amiga interface, and it is the shortest of the bunch; you can finish a game in a few hours. This ability may make Stellar Conflict the best choice if you're new to conquest.

EMPIRE

I enjoyed all three of these games so much that I had a tough time picking a favorite. I eventually chose Empire (Interstel Corp., $49.95). In it, your goal is to conquer a single planet, not a galaxy. You start with one city. Using the armies that it produces, you then find and capture other cities on your continent.

You can make each city produce such different forces as armies, fighter jets, submarines, aircraft carriers, and battleships. It takes a different number of turns to produce each kind of force, and, of course, you use different forces in different ways. Fighters, for example, can travel five spaces in a turn; while armies can travel only one. Such high-speed travel is expensive, however: Fighters must refuel at a city or aircraft carrier every 20 spaces.

When you've conquered your continent, it's time for the rest of the world. Armies can travel only on land, however, and only armies can conquer cities, so you must build a navy. Each troop transport can carry six armies to land masses that you should scout first with your fighters.

Throughout this process you must manage the ►

Manufacturers' Addresses

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distributed by Electronic Arts
1820 Gateway Dr.
San Mateo, CA 94404
415/571-7171

Par Software
PO Box 1089
Vancouver, WA 98666
206/694-1539
800/433-8433

Strategic Studies Group
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production of your cities and balance your arsenal of armies, navies, and fighters. All this effort pays off when you encounter either of your two rivals. Good planning is particularly important because of the large size of the playing field and the comparatively slow speed of many of your crucial forces. It's a bad idea, for example, to produce battleships near the front line where the city is vulnerable to capture. Nor do you want to build armies 50 spaces behind the front line, where they will dawdle uselessly.

For the power hungry, I recommend all three of these games. With luck, you, too, will be able to say that you came, saw, and conquered. □

Although not the type to be caged in an office, B. G. Hunter does skulk in occasionally to pick up his mail. Write to him c/o AmigaWorld, *Editorial Dept., 80 Elm St., Peterborough, NH 03458.*

G A M E R E V I E W S

GUNSHIP

By Kevin C. Rohrer

THE U.S. ARMY'S Apache attack helicopter flies faster, is more durable, and packs more firepower than any other of its type; Gunship puts you at its controls.

Familiarize yourself with the Apache's realistic controls and weapons' systems (Sidewinder air-to-air and Hellfire antitank missiles, 2.75-inch free-flight rockets, and 30mm cannon rounds) by taking it for a few spins around the gunnery range in the U.S., shooting up simulated enemy emplacements to your heart's content without getting shot at. Practice your landings until they become second nature to you, as they are difficult to master.


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On a mission, you use a combination of the mouse or joystick, and keyboard, to pilot your helicopter through enemy territory, destroying their units, vehicles, and installations. Next, take out your prime and secondary targets, and head for home, all the while keeping an eye on the altimeter and fuel gauges, damage warning lights, and threat indicator. Should a missile appear on the latter display, drop chaff if it's radar guided and turn on the ECM, or drop flares if it's guided by infrared. Once you've landed, you'll receive your debriefing, with its accompanying promotions and awards, or Court's Martial, if your mission failed.

While MicroProse made Gunship as realistic as possible, the game falls short in the graphics and sound departments. The screens aren't as detailed as versions for other computers, and there are few digitized sounds. Those included are poor.

Gunship is an exciting, detailed simulation of a modern combat helicopter, but its mediocre graphics and sound, plus the excessive copy-protection, make it a near miss. *($54.95, MicroProse, 180 Lakefront Drive, Hunt Valley, MD 21030, 301/771-1151. No special requirements.)*

BLOOD MONEY

By Tim Walsh

A FOLLOW-UP TO Menace, Blood Money has what it takes to attract the masses: beautifully detailed graphics, fast shooting action, and an introductory screen replete with unique sounds, digitized voices, and music. Seeing this demo once is enough, though; to bypass it, press the joystick's fire button and the left mouse button simultaneously. To further slow things down at boot up, the game asks you to replace disk one with disk two in df0:; keeping disk two in df1: ►

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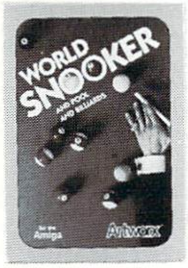
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or df2: is not sufficient. If you have an accelerator board, switch to 68000 mode or Blood Money will not load.

At the start of the game, you have 200 credits and the choice of either a one- or two-player game. A hundred credits buys you a helicoptor gunship, but you'll have to spend your entire cache for a submarine to go aquatic shooting. Both are equipped with an unlimited supply of bullets. Higher levels result in more credits, enough to buy a jet-pack, a rocket fighter, or more powerful weapons. Each vehicle operates in a different environment.

Once you make the necessary selections, you are ready to go on an alien safari. The first wave of cannon fodder for your helicopter is robot-like "Walkers" that trudge along the top and bottom of the screen; a heavy school of jellyfish greet the submarine. Pilot your vehicle defensively; touch any surface or object and the ship explodes. At least you have four lives.

When I began playing Blood Money, my games were over so quickly and my overall scores so low I thought my reaction times had slowed. With a little practice, though, most hot shots should be able to climb the high-score ladder without any problems.

To pause the action, press the space bar; resume by pressing the fire button. To abort a mission entirely, press the Escape key. Be patient after you abort or die; before you can play again, the game cycles through an introductory screen displaying your score, a high-scores screen, an options screen, and a craft-selection screen. This lengthy interruption always broke my shooting rhythm, and is the one annoyance in this otherwise satisfyingly frenzied shoot-'em-up. *($39.95, Psygnosis Ltd, PO Box 483, Addison, IL 60101, 800/669-4912. Joystick required.)*

PRISON

By Peter Olafson

AN ARCADE-adventure imported from England, Prison is nothing new under the old alien triple-sun. What it does, however, it does well. Prison plays fast, it's easy to understand and control, and it has those yummy chromed Amiga graphics.

You are the wrongly-convicted Jag Edwards (parents seem partial to rock-star names in the outer space of the distant future) who is trying to assemble a spacecraft and escape from the prison world of Altrax.

As usual, the horizontally scrolling path to freedom is fraught with danger; Altrax is divided into neighborhoods populated with fierce aliens. The floors are sometimes booby-trapped, but you can see the traps before you step on them. Doorways are clogged with debris. Luckily, Prison's bearded and back-packed hero (I kept looking for peace symbols and granola bars) moves, punches, and searches at a nice clip. You must rely on your own sense of direction, however, in this rabbit warren of a planet. The twists and turns eventually get hard to follow—I kept getting lost.

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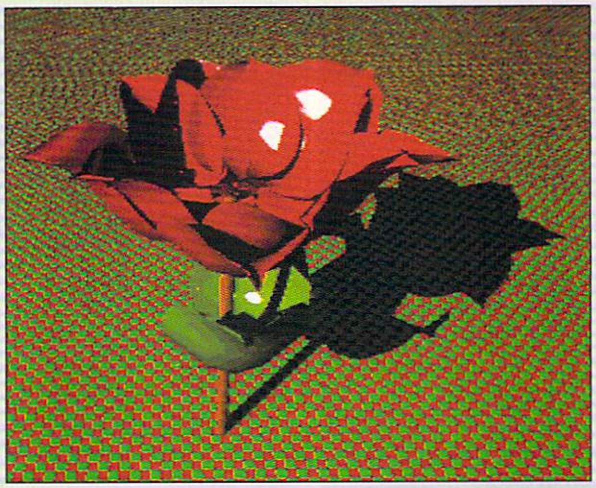
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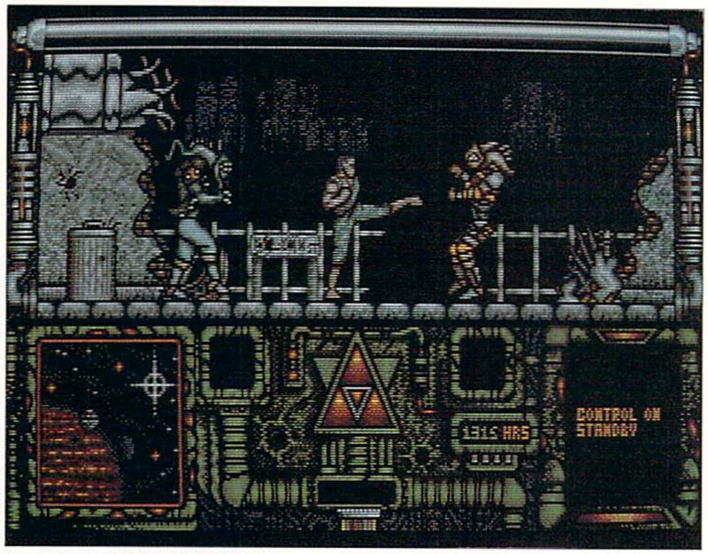
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plenty of help. Pushing the fire button while pushing up on the joystick displays a



Kick and scratch to escape.

menu with all kinds of charitable and context-sensitive suggestions for objects you possess. Be careful: Not all are necessarily the best thing to do at the time. One early option just locks you in a room. Use the save option liberally.

With good graphics and game mechanics, swift play, and an involving (though silly) story line, Prison is worth looking into . . . and breaking out of. *($39.95, Actionware Inc., 38 W. 255 Deerpath Rd., Batavia, IL 60510, 312/879-8998. Joystick required.)*

Fast Break

By Mark L. Van Name and Bill Catchings

NEITHER OF US has ever dunked a basketball. We've each come close, and we've always wanted to feel the rim under our wrists, but we've never quite made it. Accolade's Fast Break is a lot like our dunking careers; close, but not fully satisfying.

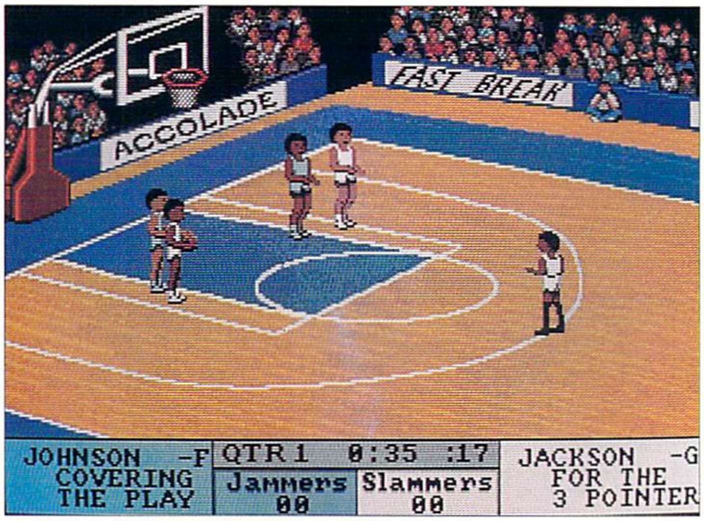
Unlike most video basketball games, Fast Break is three-on-three, not one-on-one. The two teams, the Slammers and the Jammers, each have a center, a forward, a guard, and reserves for each position. Players differ in characteristics such as speed and shooting ability. You pick your starters, and you can substitute between quarters or during time-outs.

You play the computer or a human opponent for four three-, six-, nine-, or twelve-

minute quarters of full-court basketball. Unfortunately, you get to see only half of that court at a time. On offense, you control the ball handler. You pass the ball by facing the intended recipient and clicking quickly. To shoot, hold the button down longer. On defense, you control the player who's wearing high, black socks. You can rebound, block shots, and even steal the ball. You can also cycle control to the other players by clicking.

Despite those black socks it's often hard to know which player you're controlling, because they all look very much alike. At first, we often had to basket where he'll have a chance at blocking the shot or grabbing a rebound.

While Fast Break offers a pretty good time, a lot of small flaws keep it from being a complete champion. For one thing, it has no skill levels. You'll lose terribly at first, but soon you'll surpass the computer and seldom lose. Nor are the statistics up to standards. The game keeps track of field goals made and attempted, points, fouls, steals and turnovers, but not rebounds and assists. Worst of all, the players never tire. The first string is better than the second, so there's no point in



Take your shot or make your move.

consult the bottom of the screen to see which players we were currently using.

Fast Break is high-speed, phi-slamma-jamma, fast-break basketball. Follow the basics. Your center rebounds and passes to the guard, who rushes the ball up court. When he crosses half court, the guard passes to the forward, who slams the ball home—lay-ups are for wimps! Get back fast on defense; after the score, click to make your center the active player and move him under the opposition's substituting. This fault, along with the inadequate statistics, makes strategy irrelevant and reduces Fast Break to a simple arcade game. Still, we'll play Fast Break until a brash newcomer with the style of the Pistons unseats it. *($44.95, Accolade, 550 S. Winchester Blvd., San Jose, CA 95128, 800/245-7744. No special requirements.)* ■

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from p. 18
up on screen, which is a potential source of confusion for children, as is the fact that the program refers to China's capital as Peking (the manual does too, but includes the currently used name of Beijing in parentheses). My only other complaint concerns the fact that once you have completed 15 assignments and succeed in capturing Carmen herself, you are welcomed into the Acme Agency's Hall of Fame and automatically retired. To continue playing then, you must start over as a rookie under a new name. I would like to see supplement disks offering more levels perhaps, but more importantly, another 30 or so cities.

These few criticisms are minor compared with the program's overall quality. Where in the World Is Carmen Sandiego? is fun and educational. It will not form the backbone of a geography course, but in an age when many high-school graduates cannot identify London on a world map, a captivating and entertaining means for learning basic facts is commendable. A few hours on the search for these villains, and the almanac, atlas, and perhaps even the encyclopedia will no longer be strangers to your child. I am eagerly awaiting Broderbund's planned release of Where in the USA Is Carmen Sandiego? and Where in Europe Is Carmen Sandiego?

Where in the World Is Carmen Sandiego?
Broderbund Software Inc.
17 Paul Dr.
San Rafael, CA 94903-2101
415/492-3500
800/527-6263
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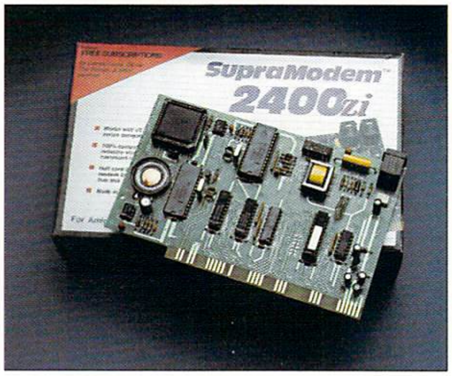
SUPRAMODEM 2400zi

Here's some inside information.

By John Foust

ONE-SIZE-FITS-all external modems are a dime a dozen. Supra Corporation's newest telecommunications hardware, however, is fashionably different. The SupraModem 2400zi, the first internal modem available for the Amiga, is tailor-made for A2000-series machines.

Fitting the unit into your machine is a cinch: Simply remove the cover (and the five screws holding it there) from your computer, and slip the six-inch square card into an expansion slot. A short cable extends from the modem card to the back of the computer, where a small jack assembly fits into any of the openings at the back of the computer. The modem comes wired for those used by IBM PC



High-style telecommunications for the A2000.

cards, but Supra thoughtfully includes an alternate assembly for the opening behind the Amiga coprocessor slot; thus, you can make do in the unlikely event that the PC side is full.

Supra supplies the extra phone cable needed. Unplug your phone from the wall, connect it to the modem, join the extra cable from the modem to the wall, and you are wired and set to go. You can use the phone for voice calls when the modem is not in use, although I noticed a harmless click on the line whenever I powered up my Amiga while talking on the phone.

The 2400zi package includes a well-written 88-page manual, a wonderful reference card that lists all Hayes AT commands, and a disk of impressive installation software. All the installation programs work well from both the Workbench and the CLI, and while other programs employ the COPY comand for setting options, the 2400zi software lets you set options using either Tooltypes or the command line. The only thing that prevents this package from being 100 percent ready-to-go is its lack of any public-domain telecommunications program (ordinarily as common as ragweed pollen).

The ShowModem program opens a window with graphic substitutes for the HS, CD, RD, SD, TR, and MR LED lights found on most external modems. You can open the ShowModem window onto Workbench (or any other program that has a title bar on its screen) by specifying the host program's screen title in the CLI. If you try this, you should remember to quit ShowModem before exiting the host program; until AmigaDOS 1.4 arrives, closing the host first leaves you prone to a guru visit.

MIX AND MATCH

To replace the connection external modems provide to the serial port, Supra supplies a device driver that talks to the internal 2400zi. Weighing in at 10,504 bytes, the Supra modem0.device is twice the size of the regular serial.device. To copy it to your DEVS: directory, simply use the InstallDriver program supplied with the modem.

Although most late-model telecommunications programs offer settings that let you specify a device driver and unit number, older programs often assume that the serial port driver is named serial.device, and that the unit number is 0. The included ModemModify utility lets you alter telecommunications programs to use the Supra modem device by changing every occurrence of "serial.device" in the program file to "modem0.device." A program thus modified will access the internal modem instead of the standard serial device. If you want to use an external modem in addition to the 2400zi, you will need to duplicate your telecommunications program and use the standard copy for the external unit and a customized one for the internal SupraModem. If you would like to use multiple internal modems (you can install up to five in one machine), you must customize a copy of your telecom program for each.

Because of the way the 2400zi communicates with telecommunications software, it will not work with programs that do not use the serial.device for serial programming. Micro-Systems Software's Online! won't work, for instance, because Supra's ModemModify utility cannot locate "serial.device" in the program. The Supra manual warns that the public-do-

main program HandShake does not work, either.

Make a Statement

An ability to handle phone line noise is crucial for a modem. Some line noise is unavoidable, of course, but the SupraModem 2400zi held up well on local bulletin boards. On long-distance direct calls it performed as well as a much more expensive modem.

Through a small speaker installed on the card, the modem lets you listen as it works. At first I could barely hear the dial tone and dialing sounds over the fans and hard disk, but changing the volume setting from medium to high with the ATL3 command fixed the problem. (You can also turn the sound off completely.) The AT&W command saves your volume setting.

Although an external modem is a slightly safer purchase considering you can use it on any computer equipped with a serial port, adding the internal SupraModem is a smart way to reduce the clutter behind your Amiga 2000. The 2400zi performs well and comes with a one-year warranty. The package includes other extras, too: coupons from several telecommunications services (such as CompuServe, the Source, GEnie, Official Airline Guides electronic travel service, and the Dow Jones News/Retrieval stock service), ranging from free signup to a $15 credit.

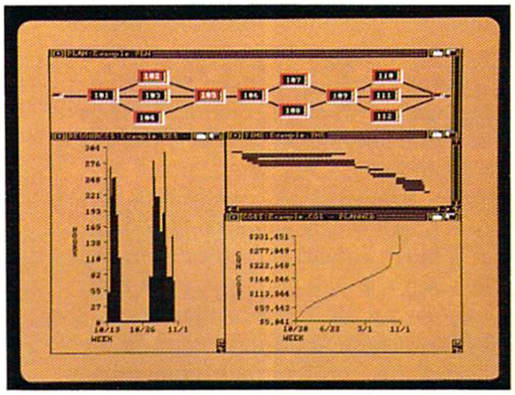
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Supra Corp.
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Albany, OR 97321
503/967-9075
800/727-8772
$179.95
No special requirements.

Project Master

Manage your projects with graphs and numbers.

By Loren Lovhaug

PROJECT MASTER IS best described as a project- or activity-accounting system. It can assist managers in juggling the overlapping and interdependent tasks involved in a complicated undertaking. The package includes facilities for planning, tracking, controlling, and evaluating a project's success.



In the Plan module, interdependent jobs are linked by lines.

Project Master is divided into six modules that run independently. Each of these helps you plan your project or provides feedback on your progress. To give you a practical example of how Project Master works, let's assume that you are in charge of setting up a new desktop-publishing and video-presentation group for your company. This undertaking involves some major steps, including: definition (of budget and resources, staff positions, and equipment needs), research (including evaluation of potential hardware and software purchases, and interviews with staff candidates), implementation (purchase of hardware and software, hiring of staff), installation (equipment and software setup, staff training), and evaluation (of progress and group readiness).

Several of these tasks are interrelated and must follow in sequence, while others are independent. The Plan module, which defines your project graphically, lets you visualize the sequence and relationships of these major tasks. Each task within a project is represented by starting and ending nodes. You relate activities on your Plan chart by connecting their nodes with lines. This process is mouse intensive, and I found it tedious, especially when trying to align the node markers horizontally and vertically. A snap-to grid option (such as those found in desktop-publishing packages) would simplify this process. On the plus side, ►

there are pull-down menus, a repositionable toolbox including all menu items, and keyboard shortcuts for controlling the module. Plan diagrams can be saved as a standard IFF graphic for incorporation into other programs.

You can access both the Input and Statistics modules through the Plan module, and thus enter all of the pertinent data for each task without leaving the Plan module. On the other hand, you can also bypass Plan module entirely if you do not want to construct a diagram of your project.

Details, Details

The Input module lets you enter and update details relating to the numerous tasks that make up your project. Depending on whether you are entering projected or actual data, you will choose either the Planned or Actual entry mode. The program prompts you to enter individual task duration, starting and ending dates, costs, and resources. Going back to our example, we might identify various computer retailers and any in-house computer experts as resources for our hardware and software research task. While the format is adequate, the input blanks are a bit small; room for another dozen or so characters would allow for more descriptive category and task names.

The Statistics module generates exhaustive statistical data about your project, including a summary of all possible task paths (jobs related to one project part), an analysis of the most optimistic and pessimistic start and completion dates for each task (and how these affect related tasks), estimated longest and shortest task-duration times (including measures of variance and standard deviation based on the slack in your task statistics), identification of critical paths (those required for the project to succeed) and maximum paths (longest possible project duration), full summaries of resource estimates and cost expenditures, and more.

In our example, the Statistics module would identify at least three critical paths, including a staff-hiring path, and hardware- and software-acquisitions paths. It would also help you avoid potential problems. By continually monitoring the information it provides, you can alter your plan, if need be, to ensure completion of your enterprise.

The final three modules—Resources, Costs, and Time—generate charts representing the data churned out by the Statistics module. Your charts can depict the entire project or individual tasks, resources, and cost centers, plus subgroupings for each. You can scale the X and Y axes in all charts manually and automatically, and adjust the display colors. Project Master allows you to store all graphs in IFF format, and the Time charts (Gantt diagrams) can be saved as structured-object files for use with object-oriented graphics packages. You can also dump these files to any Preferences-supported printer.

Project Master's 220-page manual includes plenty of illustrations, examples, and tutorials, plus a complete index. Several examples on the program disk illustrate possible project scenarios.

Headed for the Big Leagues

Project Master is powerful tool for professional managers who need to supervise complicated projects, manage resources, and make complicated time studies. The package is overkill for organizing a church bazaar; Project Master is aimed at the medium- to large-scale business market. Its table- and chart-making abilities make it good for preparing grant proposals, business plans, and group presentations as well as administering and evaluating projects once they are underway.

Project Master
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$195
No special requirements

Transcript

It's only words.

By Sheldon Leemon

TRANSCRIPT DISPLAYS ONLY one font on screen at a time, and makes no provision for including graphics in a document—it does not even show line

breaks as they will appear on the printed page. Transcript promises simply to help you write, edit, and print text at a very reasonable cost.

At a time when the Amiga word processors in vogue are incorporating desktop-publishing features, you may wonder why Gold Disk is seemingly taking a step back. The reasoning is simple. In the real world, the distinct functions of text composition and page layout are usually performed by different people. WYSIWYG (What-You-See-Is-What-You-Get) programs must continually update the screen, a task that requires tremendous processing power. Consequently, such programs perform rather sluggishly. Moreover, graphics-placement features add to a program's complexity and often and detract from the business of writing and editing text.

Thus, Transcript is designed to complement page-layout software, not to replace it. In fact, Transcript allows you to import text from Gold Disk's Professional Page desktop-publishing program, edit it, and export it back to that program. If you wish, it will suppress the display of any formatting codes embedded in Pro Page text. Eventually, Gold Disk plans to allow Transcript to act as an on-line editor with Professional Page.

The Name of the Game

True to its billing as a high-performance word processor, Transcript provides a wide array of text-editing and -manipulating features. There are menu options with keyboard equivalents for moving the cursor forward and backward one word, one sentence, or one paragraph at a time, as well as the usual options for moving the cursor up or down a screen, to the beginning or end of a line, and to the top or bottom of your document. The program has a scroll bar to help you move through text quickly, but unlike most, it is situated horizontally so that you must move the slider left to go towards the start of the document, and right to get to the end. The problem with this scheme is not the bar's unusual orientation, but the fact that the slider remains the same size whether the text on screen represents the entire document or only a fraction of it. As a result, moving the slider sometimes produces no result. Thankfully, the many other methods available for moving the cursor lessen the impact of this flaw.

The program has menu options with keyboard equivalents for cutting words, sentences, paragraphs, and lines. It also allows you to mark text using the mouse or function keys. Unlike most programs, Transcript accumulates text that is cut or copied to the buffer, rather than replacing the contents of the buffer each time an addition is made. The unique Bookmark feature lets you store up to four individual cursor positions, which you can then jump to by pressing a function key. Yet another feature makes it easy to change a document from word-processor format (in which a new line character appears only at the end of each paragraph) to text-editor format (in which a new line character appears at the end of each line) and back again.

Judging by Appearance

Transcript gives you control over a number of factors that affect the program's display and performance, and once you have chosen your settings, you can save them for future use. You can change the four colors used for background, text, borders, menus, and cursor. You can also resize the cursor, determine whether it blinks quickly, slowly, or at all, and designate the number of spaces to be used for tab stops. Documents are displayed on either the Workbench screen, a custom four-color non-interlaced screen, or a four-color interlaced screen, and if you have increased the size of your screen with Transcript's MoreRows utility, the program uses an overscanned display.

The program even gives you some control over the display font. On the Workbench or non-interlaced screen, your Preferences setting determines whether the Topaz 8 or Topaz 9 font is used; on interlaced screens, Topaz 11 is standard (although screen refreshing sometimes leaves bits of pixel fallout with this font).

Finally, Transcript enables you to customize keyboard macros. You can program the function keys to produce up to ►

ten different sequences of text and commands. Two of these sequences can be invoked with the mouse. This means, for example, that you could set CTRL-click to cut text and CTRL-double-click to paste it down.

While these settings are helpful, I feel that they do not go far enough. For example, although you automatically get the Topaz 11 font on an interlaced custom screen, you cannot access this font on an interlaced Workbench screen. The inability to select a two-color screen is particularly unfortunate, because this precludes Transcript from taking advantage of the hi-res displays allowed on the Viking I (Moniterm) and A2024 (Commodore) monochrome monitors. Another area needing more customization options is keyboard equivalents. Transcript has so many key-command sequences that the program employs all Amiga-key combinations, the function keys, and many shift-key combinations as well. Granted, there are too many keyboard commands to use mnemonic assignments for all of them, but users should be allowed to define these themselves, rather than having to remember that the Amiga-D combination is required to cut a line.

Wrapped Up in Text

In terms of print options, Transcript is fairly flexible but less than friendly. Most print formatting is done by adding codes to the body of your text. For example, to set the left margin for even-numbered pages to eight, you would type: <SHIFT-ALT-s>ll8. There are special formatting codes to set margins, headers and footers, justification, page numbering, and to control widows and orphans. In 1989, no self-respecting program should require you to embed codes into text. Thankfully, the default settings usually turn out good-looking copy.

In addition to basic text editing and printing, Transcript performs many functions not normally associated with low-priced word processors. It has a mail merge capability, for instance, allowing you to print form letters that refer to a data file for customization. Its index-creation facility lets you mark words for inclusion in an index file, which the program automatically generates. It has a print-preview feature that lets you see line and page breaks as they will appear in print. When printing a document, the program keeps the right margin from becoming too ragged by automatically hyphenating words. The program also includes a spelling checker based on Gold Disk's GoldSpell II (a program that costs just $25 less than Transcript). Although the utility works fairly well, it has some quirks: It must be run separately from the Workbench, it treats the apostrophe like a space, it ignores accented characters, and unlike the main program, it offers no keyboard equivalents for its gadgets.

Whatever its shortcomings, Transcript does deliver on its promise of an effective, low-cost tool for producing large quantities of text. Its extensive use of keyboard equivalents reduces most common operations to a single key combination (or, for the novice user, a single menu selection). Its concise 80-page manual (roughly the size of the introduction to the WordPerfect manual) gives a good indication of the program's ease of use. If your main interest is composing text rather than creating printed works of art, you will find that Transcript more than suits your needs.

Transcript
Gold Disk Inc.
PO Box 789
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No special requirements.

Elan Performer

56 keys to show time.

By Gary Ludwick

AT FIRST GLANCE, Elan Performer appears to be yet another slide-show program for Amiga graphics. But it's a good deal more than that. Performer not only allows you to call up IFF (Interchange File Format), HAM (Hold-and-Modify),

and RGB (Red, Green, Blue) images from almost every graphics program available, but it loads, sequences, and plays various animation formats as well—all under your complete and instantaneous control.

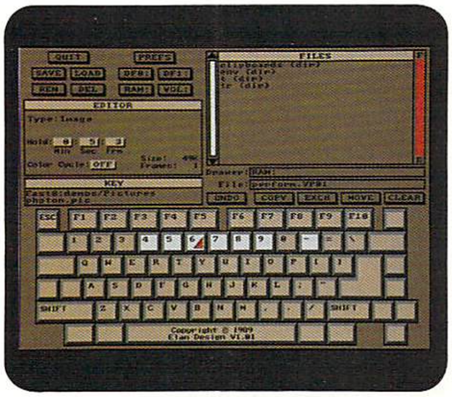
In creating Performer, Elan Design incorporated the same excellent interface they used for their Invision program. Started from either the CLI or Workbench, Elan Performer depicts the Amiga keyboard, along with a directory window and a small editor window, on screen (see photo). These keys are a repository for every element of your graphics presentation.

Putting a presentation together couldn't be much easier. In the directory window, locate the directory in which your graphics or animations reside, then double click on the name of the file you want to use. When the word "To" appears under the cursor arrow, place the cursor over an on-screen key and click once. Your image or animation is now assigned to that key. For especially large presentations, Performer allows the assignment of another 56 images using the Shift key. Still not enough? Peformer also provides for nested presentations, in which one key calls up a whole new series of key assignments and their corresponding images.

The screen changes as you assign graphics to keys: Keys colored beige are empty, a gray key indicates that an image has been assigned to the key but not loaded into memory, and white means that the image assigned is in memory.

Editing Controls

Once you have made assignments, you can copy, exchange, or clear them using gadgets within the file window. Elan Performer also allows you to determine each image's display via Editor windows corresponding to each key. A window tells



Select your image in the directory window (upper right) and click on a key to assign it.

you the type of image assigned to the key, its size (in bytes), and in the case of animations, the number of frames involved. For IFF, HAM, and RGB images there are two controls. One determines the amount of time, in minutes, seconds, and frames (the latter is useful for syncing with music and transferring to videotape), that the image will remain on screen; the other is a toggle switch that enables color cycling if such is part of the original image. For animations (Performer handles RIFF, Invision, Anim 3, and Anim 5 formats), the Editor screen also includes controls for number of loops, double buffering (RIFF) and reverse play (Anim).

Working in conjunction with the Editor is the Prefs window, whose settings control how your imagery loads and displays. Through this window you can direct Performer to load all images into RAM (if you have enough memory), or call each piece from disk as needed. You can also select double buffering (while one image is displayed, the next is being painted into memory)—a technique that smooths transitions between images.

Once you have made all your key assignments and determined the settings, you can save the whole show—environment (script with Editor and Prefs settings) and elements (visuals)—to disk. You can create self-running presentations by copying these components and the Performer program to a bootable disk and inserting a single command line into that disk's startup-sequence.

On With the Show

Elan Performer is a flawless...well... performer. It gives you a choice of four display methods: Automatic, Manual, Direct Play, and Remote Control. In Automatic mode, Performer displays your images in sequence according to their positioning on the keyboard: across (left ►

to right) and down. On a fully loaded keyboard, it would begin with F1 and continue to the / key. Manual mode works in the same sequence, but here you control the timing of your display with arrow keys or the mouse. In this manner you can loop both backwards and forwards through your images and animations, and freeze any frame for any length of time.

In Direct Play, you use your keyboard like a musical instrument: Press a key and an image is immediately displayed. If the images are contained in memory, the screen changes just as rapidly as you can press keys. Mouse and arrow keys allow you to manipulate animations frame by frame both forward and backward—even using two frame bounce-back loops.

Remote control turns the Amiga's mouse into the same kind of remote unit provided with most slide projectors. It gives you interactive control from a lecturn, for instance, away from the keyboard.

Finally, Performer also includes a powerful set of animation utilities that let you cut an animation into individual frames, reorder the frames or alter them with a paint program, then splice them back together again. It also enables you to join individual frames of virtually any format, size, resolution, or color map into a single animation. With this facility and DeluxePaint III (Electronic Arts), I was able to achieve something even Ted Turner couldn't. . .the colorization of *Citizen Kane*! I divided a RIFF animation captured with Live! (A-Squared) of Kane's election convention into its individual frames, colored the frames in DeluxePaint III, and spliced them back into a coherent animation.

Big Bang

For $59, Elan Performer packs as much value into a 3½-inch disk as you are likely to find. The program is not copy protected, the manual is very good, and the package even includes a tablet of keyboard-outline sheets, which make it easy to keep track of key assignments as you work. Performer is worthwhile even if all you want to do is show off your large collection of downloaded artwork and animations.

For those who want to combine graphics from a variety of sources into a business presentation without disk and program switching, Performer is just about the only game in town. (Elan Design plans to release a PAL version, too.) It's flexible, smooth, glitch and guru free, and it provides most of the controls you will need with one major exception: transitions. Performer throws your images onto the screen as a slide projector does—kerplunk, kerplunk, kerplunk. For business and professional applications, Performer needs to implement such transitions as wipes, fades, and dissolves. In my opinion, such an ability would move Elan Performer from semi-pro to full-professional status.

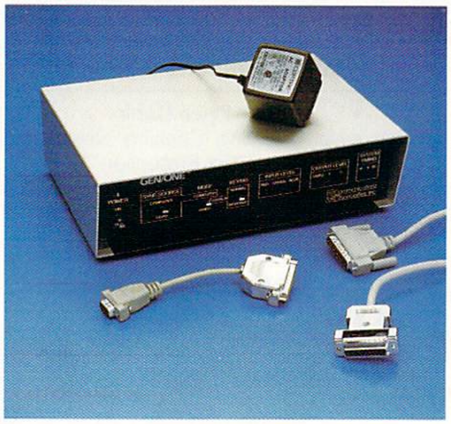
Elan Performer
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Box 31725
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No special requirements.

GEN/ONE

Halfway to super.

By Joel Tessler

ALTHOUGH S-VHS (Super Video Home System) was a subject of considerable controversy in the video community a few years ago, it is recognized as a viable alternative to expensive high-end systems today. The Amiga video community is no exception: Many of us are looking for hardware to encode and genlock Amiga graphics with S-VHS machines. Communication Specialties offers the genlocking encoder GEN/ONE in answer to the call.



Toggle switches let you make adjustments easily.

Packaged in a heavy metal case with a black matte front panel, GEN/ONE looks like an impressive brute. Toggle switches on the front panel allow for adjustments of sync source and mode between computer or video, and the keying switch lets you choose normal or reverse video. Trim potentiometers enable adjustment of input RGB levels from the Amiga, composite video, and Y/C output levels, and of horizontal, vertical, and subcarrier system timing. The back of the unit has two output BNC connectors configured for video, and one each for key, Y, and C. There's also a DB9-RGB monitor loop-through. The input section has a 24-pin computer port, and a composite BNC video input with a loop-through/termination toggle.

Give 'Em the Hook

Carefully following the manufacturer's instructions, I interfaced the GEN/ONE to an A2500. My efforts were greeted by a black screen and some occasional computer party trash. I removed all the cables and tried five more times, with the same results. Then I tried hooking up another genlock, SuperGen by Digital Creations, to verify that the RGB port was working. It was.

When I hooked the GEN/ONE up to an A2000HD, the unit once again failed to ouput a signal. Upon further investigation and some chip swaps, it became obvious that the reason GEN/ONE would not operate with the A2500 and A2000HD is that it is incompatible with the new Fat Agnus chip.

Finally, I tried using the unit with an A500. I checked all switch postions on the front panel and hooked up the cables to the appropriate video and computer ports. The A500 refused to boot; the only response was a flashing drive light.

The manual states clearly that GEN/ONE will function in the internal sync ►

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mode only when configured for computer (not video), and until this point, I had the GEN/ONE set up accordingly. Given the results I had achieved, however, I decided I had nothing to lose by switching to external sync. I did this, and plugged a camera signal into the video-in BNC connector. After a cold boot with external sync enabled, Workbench loaded successfully. With Workbench on the screen, I flipped the overlay toggle. Lo and behold, the camera color bars appeared behind the Workbench text and icons. I then loaded DeluxePaint III, opened a hi-res screen, and brought up a picture file. It looked pretty fair except for a noticeable dot crawl and some noise.

To check the GEN/ONE's output on a vectorscope and waveform monitor, I took it, along with the A500 and appropriate test gear, to a video dealer. I set the unit up so that NTSC color bars displayed on the A500 monitor and output was directed from the GEN/ONE composite output connector. Although there was noise in the signal, the sync proved stable. An engineer at the dealer's commented that the chroma levels were very low, but while adjusting the RGB potentiometers increased the chroma output slightly, that did not solve the problem. Again, to verify that all was well with the computer, I tested it with SuperGen, which output within specification limits.

Out But Not In

Using the GEN/ONE in an S-VHS editing environment presented another problem. GEN/ONE does not have an S-VHS input! This forced me to take the composite video output from the source S-VHS editing deck, plug it into composite video-in of the GEN/ONE, and then dump the GEN/ONE S-VHS output to the S-VHS record deck. The result of this design is that you have use of only half your S-VHS editing system. I performed additional editing with GEN/ONE in the composite-only mode and got comparatively normal results, with one exception. Flicking the overlay toggle switch while rolling source tape into the recording deck in Record mode produced a noticeable glitch. The only way around this problem was to stop the editing process, switch to overlay, and then resume. No provisions are made, either in software or hardware, for fading Amiga graphics in and out. Perhaps some of us could live with this setup if these limitations were reflected in the cost of the unit, but with a price tag of $895 plus the extra dollars required for S-VHS cables (which Communications Specialties sells for $45), GEN/ONE is no bargain-basement unit.

GEN/ONE's ability to allow adjustments in system timing for horizontal, vertical, and subcarrier is another plus, as these features are essential in a video studio. The unit also incorporates comb filtering, a state-of-the-art technique used in high-end video systems to reduce cross-luminance defect. This feature is not offered on any other Amiga genlocks, and its proper implementation should result in a significantly sharper image with less noise. In the case of the GEN/ONE, however, I failed to notice any benefit.

Fade to Black

To be certain these results were not attributable to a defective unit, I performed all my tests on two different GEN/ONEs, and, unfortunately, got the same perfomance from both.

Compatability with the new Fat Agnus is an important consideration. Although the developer offers to modify your GEN/ONE to support the chip (there is no charge for this service under warranty), this is not necessarily a solution to the problem. An associate of mine recently sent his unit to Communications Specialties for the operation; when he got the modified GEN/ONE back and tested it, the unit failed. Perhaps the company should rethink the design of GEN/ONE. It has notable features, but notable flaws as well. If you plan to spend this kind of money for video, go down to your local dealer and try a GEN/ONE for yourself.

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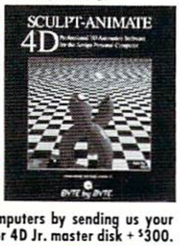
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HORS D'OEUVRES

This month's collection of hints and tips focuses on AmigaDOS.

Compiled by Tim Walsh

October has been designated AmigaDOS month in Hors d'oeuvres. Learn how to make new 1.3 Shell windows, use the DIR OPT command, bring dead disks back to life, and transfer ARCed MS-DOS files properly.

CLEANER SHELL

HERE'S AN EASY way to make a custom shell window. Using a text editor, enter the following two lines and save them to a directory using the filename CLS:

```
.key lines
echo "*ec*e[0x*e[80u*e[0y*e[
   <lines$25>t*e[H*e[J"
```

To use this new Shell window, enter Execute CLS from a Shell command line. CLS clears the screen (half the screen in interlace mode) and removes the border lines, title and gadgets normally displayed by Shell windows. Directory listings and screen output is properly spaced without the wrap-around effect that makes narrow window output hard to read.

You can also change the value of <lines$25> for more or less lines in the custom window.

Tapan A. Desai
Calcutta, India

THE *AMIGAWORLD* SALVAGE OPERATIONS

TOOL CHEST VOLUME 1, disk 1 contains a disk utility called Disk Salvage, which is a less potentially damaging alternative to the AmigaDOS 1.3 disk-salvaging program DiskDoctor. A good rule of thumb is to never try to revive the original corrupted disk; instead, work with a copy of it. If your standard method of disk copying (Workbench, CLI, disk utility, etc.) fails, and your Amiga is equipped with over a megabyte of memory, try the following two-step procedure to make a copy:

1. Make certain no extraneous files or data are present in your RAM disk. Copy the individual files from the corrupted disk to your RAM disk using either the CLI or Shell. With a two-drive system and the corrupted disk in DF1, and a copy of your Workbench disk in DF0, the syntax is as follows:

COPY DF1: to RAM: all

2. When the copy process is complete, remove the revived disk from DF1 and place an empty formatted disk in its place. From the CLI or Shell, enter the following command to copy the contents of the RAM disk back to the destination disk in DF1:

COPY RAM: to DF1: all

When the files are finished copying back to the destination disk in DF1, you should be able to revive them from that disk with Disk Salvage. Likewise, this process also lends itself to making copies of damaged disks revived by Disk Salvage that remain corrupted enough to cause normal disk copy procedures to fail.

Tim Walsh
AmigaWorld Staff

OPTIONAL DIRECTIVES

THE DISK COMMAND DIR OPT is remarkably flexible when used with some of its available attributes. For instance:

DIR OPT D—Displays all directories

DIR OPT AD—Displays all directories and subdirectories

DIR OPT A—Displays all directories, subdirectories, and files

Futhermore, adding the I attribute to the OPT command permits the selective deletion of files and directories by typing DEL at the prompt that appears after each filename or directory. To bypass the deletion of a directory or file, just press Return. The deletion syntax is as follows:

DIR OPT DI—Lists all directories for selective deletion

DIR OPT ADI—Lists all directories and subdirectories for selective deletion

DIR OPT AI—Lists all directories, subdirectories and files for selective deletion

David W. Ferguson
Pontotoc, MS

AMIGA-TO-BRIDGEBOARD UN-ARCING TIP

HERE'S A TIP for Bridgeboard beginners who want to download MS-DOS PD programs with the Amiga. After you've completed downloading on the Amiga side and are ready to transfer the file to the PC side, be certain that a <space>/B follows the AREAD command. For example:

AREAD RAM:Filename.arc
  a:Filename.arc /B

The <space> /B allows AREAD to perform a binary transfer from AmigaDOS to MS-DOS. The un-ARCing process will perform flawlessly on the PC side using any un-ARCing utility. Without <space> /B, the file is recognized as a text file rather than a binary file and most likely cannot be un-ARCed.

Byron R. Grover
Hobbs, NM

If you have an idea you'd like to share with our readers, send it to Hors d'oeuvres, AmigaWorld *Editorial, 80 Elm St., Peterborough, NH 03458. If your idea gets published, you'll receive an* AmigaWorld *surprise gift.* ■

WHAT'S NEW?

An extended growing season produced this bumper crop of software and peripherals.

Compiled by Jan Jackson

Musical License

CONTROL ANY AMIGA program from a MIDI instrument with **MIDI-Mice** ($85). This multitasking interface utility lets you synchronize Amiga video and animation with music performances, shares MIDI events, and chain concurrent MIDI-Mice sessions to create macro functions. Tune in to Tensor Productions, 280 Mathilda #9, Goleta, CA 93117, 805/685-6245. *Reader service number 556.*

Talk to Me

A COMPREHENSIVE SET of high- and low-level C functions, the **Lattice Communications Library** will help you to create applications that perform asynchronous communications. The library supports AmigaDOS with a full set of functions for XModem, YModem, Kermit and ASCII protocols. You can select, open, and close a communications port, set baud rate, data bits, parity, stop bits, and buffer size, and send and receive characters from the communications port. The package retails for $250 from Lattice Inc., 2500 S. Highland Ave., Lombard, IL 60148, 312/916-1600. *Reader service number 561.*

Island Hopping to Ancient Digs

ARCHIPELAGOS, A 3-D arcade game, takes you to a faraway planet with telekinetically-created myriad islands from which you must clear hostile aliens. You have a 360-degree view of the checkerboard-shaped landscape dotted with targets.

In **Eye of Horus**, a multilevel arcade game, it is your lot to find and piece together parts of a dead king and enlist his assistance in vanquishing evil across the land. Both games ($39.95) are available through Britannica Software in the US: 345 Fourth St., San Francisco, CA 94107, 415/546-1866 or Logotron: Cambridge, England, 0223-323656. *Reader service number 559.*



Alien-ousting with tropical overtones.

Get the Connection?

WHETHER YOU RECORD on Super-VHS, ED-Beta, or Hi8, or present your Amiga graphics on a large-screen S-Video monitor, you can eliminate the inherent cross-color interference in NTSC composite video systems with **S-View: The Connection**. This S-Video cable is compatible with Amiga S-Video encoders and retails for $79.95. Get a clear view with Software Sensations, 1441 S. Robertson Blvd., Los Angeles, CA 90035. *Reader service number 544.*

Accommodations

INTRODUCE YOUR A2000 to alternatives with an **ST-506 Hard Drive Adaptor**. Plug it into any slot and attach it to a peripheral drive bay to control any 3½- or 5¼-inch IBM-style hard drive, and you have a low-cost proxy for a SCSI drive. An optional steel rail lets you convert the unit to a hard card for an entirely internal installation. Link with Spirit Technology, 220 West 2950 South, Salt Lake City, UT 84115, 801/485-4233. *Reader service number 557.*

See the Light

TEST YOUR PHYSICAL science knowledge with **Lightforce**, a game in which you maneuver different craft equipped with mirrors, lenses, and other relics of physics classes to control fireballs of light. Reflect, refract, concentrate and diverge the lights to progress. The double-disk system ($39.50) comes with an Optics Tutor covering the physical properties and concepts used in the game. TSA Media will illuminate further: PO Box 291, Claremont 6010, Western Australia, 09/384-3047. *Reader service number 558.* ►

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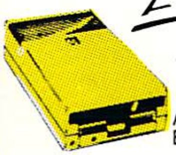
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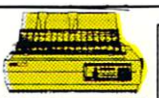
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HELP KEY

Encyclopedia "Lou Wallica" has the answers to all your research questions.

By Louis R. Wallace

BUDDING ANIMATOR

Q: *Soon after I got my A500, I decided that I just had to get a 3-D animation program, and I selected Videoscape 3D because everyone seemed to like it. When it arrived, I started reading the instructions, but quickly found it was way over my head. Being only thirteen and inexperienced with 3-D animation, this has made me afraid to buy another 3-D program. What should I do?*

Matthew Garber
Stockton, CA

A: Well Matthew, even on the Amiga, 3-D graphics and computer animation are sophisticated techniques, and there are a lot of people older than you who also find them difficult to learn. So you should be commended for attempting to use your computer for such difficult (but rewarding) pursuits instead of just using it as a game machine.

Videoscape is not the easiest 3-D animator to use, but it isn't the most difficult either. I suggest that before you spend any more money on additional programs, take the time to study what you have, perhaps getting your parents or teachers to help with the more troublesome concepts. Then, if you decide you want to go on, perhaps Sculpt Animate or Turbo Silver would be worth investing in.

Of course, if all you really want to do is make animations, then I would urge you to get DeluxePaint III. This EA package is an exceptional paint program with very good 2-D animation features, perfect for the beginner as well as the experienced artist and animator.

FLICKER ON THE 500

Q: *I own a Commodore 128 and a PC compatible and soon will be getting an Amiga 500. As a newcomer to the Amiga, I am confused and worried about the Amiga's screen flicker in the high-resolution modes. How bad is it? Is there a flicker fixer or equivalent for the A500? Should I buy a multisync instead of a Commodore 1084S? Is there a multisync with an RGBI and composite modes so that I can use it with my Amiga, PC and C128?*

John Godfrey
Jacksonville, AR

A: It is certainly true that the Amiga display exhibits flickering when used in interlaced modes (320 × 400 and 640 × 400), and depending on the monitor and colors you are using, the effect can range from a mild distraction to a display that will drive you crazy. On the A2000, the solution to the problem has been to get a MicroWay flickerFixer and multisync monitor, which works very well but will cost you around $1000. With that price tag, a lot of Amiga owners have decided that interlace isn't really all that bad! But for many people (myself included), the benefit is well worth the expense. So far there isn't a flicker fixer for the A500. One will probably be available sometime, but it could end up being even more expensive than the A2000 model.

If you are planning on using the same monitor for the A500, PC, and C128, then I would say forget about a multisync. In this case, the 1084S would be your best and cheapest solution. The 1084S supports analog display for the Amiga, RGBI for the PC and C128, and composite for the C128 (in C64 mode).

QUALITY COLOR PRINTERS

Q: *I own an Amiga 500 and I am now ready to buy a color printer. Do you have any advice on which to consider? I want the high-quality text and economy of the new 24-pin printers, but I am also considering an ink jet. My major application is word processing, but I also want to print high-quality color graphics.*

Randy Payment
Dover, NH

A: Well, it sounds like you are going to have to compromise. You want quality text output, high-quality color graphics *and* a reasonable price. Taking all that into consideration, I would suggest the HP Paintjet. I have seen decent text output and exceptional color graphics from this ink jet, and HP products have a good reputation for dependability.

ACCESSING C64 PERIPHERALS

Q: *Like many other Amiga owners, I upgraded from the venerable Commodore 64. Because of that, I have a lot of hardware for the 64 that has gone unused since I got my Amiga. Is there anything that can let me use my C64 drives, printer and modem on my A1000?*

Ebenezer Yong
Tulsa, OK

A: Progressive Peripherals markets a device called Access 64, which does allow you to use a C64 disk drive or printer with the Amiga. It does not support modems. While not expensive, the C64 devices are *very* slow, and I don't recommend you waste your time with it. Instead, why not sell them to a needy eight-bit user and take the money and put it towards an Amiga device? ■

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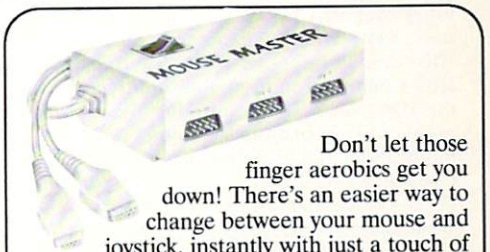
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178	183	188	193	198	378	383	388	393	398	578	583	588	593	598
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A. Do you own an Amiga?
☐ 1. Yes ☐ 2. No

B. If no, will you purchase one of the following?
☐ 3. Amiga 500
☐ 4. Amiga 2000
☐ 5. Amiga 2500
☐ 6. Other (please specify) ______
☐ 7. I currently have no purchasing plans.

C. Would you purchase an Amiga magazine which had a bound-in disk of demo programs, tutorials, etc.?
☐ 8. Yes ☐ 9. No

D. Which software packages will you purchase in the next 12 months? (Please choose all that apply.)
☐ 10. Entertainment
☐ 11. Word Processing
☐ 12. Communications
☐ 13. Spreadsheets
☐ 14. Home Productivity
☐ 15. Programming
☐ 16. Video
☐ 17. Database Management
☐ 18. Financial Management
☐ 19. Graphics
☐ 20. Education
☐ 21. Music
☐ 22. Animation
☐ 23. Sound/Speech
☐ 24. CAD/CAM
☐ 25. Other

E. Which peripherals will you purchase in the next 12 months? (Please choose all that apply.)
☐ 26. Monitor
☐ 27. Dot Matrix Printer
☐ 28. Modem
☐ 29. Memory Expansion
☐ 30. 3½" Floppy Drive
☐ 31. Hard Disk Drive
☐ 32. Gen Lock or Frame Grabber
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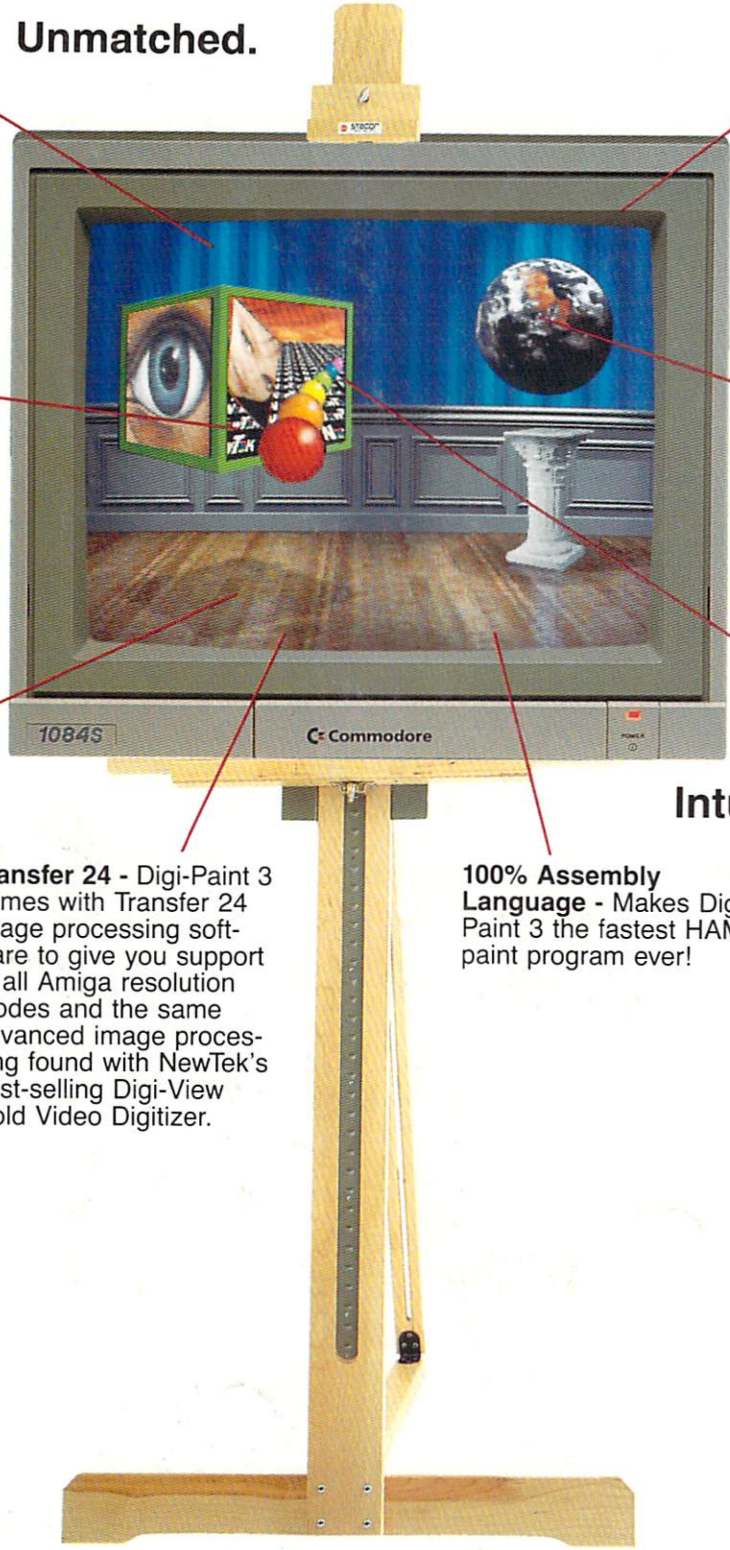
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